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The CASE *of Governor* SULLIVAN *of Massachusetts.*

[Communicated by Dr. J. C. WARREN.]

THE symptoms of organic disease of the heart, are marked with extraordinary clearness in the following case. The opportunity for observing them was very favourable; and there was every incitement to close observation, which could arise from the important and interesting character of the patient. These advantages will justify an uncommon minuteness in the detail of the case; especially, as the most accurate knowledge of a complaint is obtained from a successive view of its stages.

The late Governor of this commonwealth was endowed with most vigorous powers of mind and body. At the age of 16, he was attacked with fits of epilepsy, which first arose from a sudden fright, received on awaking from sleep in a field, and beholding a large snake erecting its head over him. As he advanced in life, they became more frequent, and were excited by derangement of the functions of the stomach, often by affections of the mind, by dreams, and even by the sight of the reptile which first produced the convulsions.

At the commencement of the American revolution, he became deeply engaged in public affairs; and from that time devoted himself to intense application to business, with which the preservation of his health was never allowed to interfere. In the expedition against Rhode Island, an attack of inflammation of the lungs had nearly proved fatal to him.

In the beginning of the year 1807, he suffered severely from the epidemic catarrh; and a remarkable irregularity of the pulse was then perceived to be permanent, though there is some reason to believe, that this irregularity had previously existed, during the fits of epilepsy, and for a few days after them. In the summer, while he was apparently in good health, the circulation in the right arm was

suddenly and totally suspended; yet, without loss of motion or sensation. This affection lasted from noon till midnight, when it as suddenly ceased, and the circulation was restored. In the autumn he was again seized with the influenza, which continued about three weeks, leaving a troublesome cough of two or three months' duration, and a slight occasional difficulty of breathing, which at that time was not thought worth attention. Soon after, in November, he had one or two singular attacks of catarrhal affection of the mucous membrane of the lungs, which commenced with a sense of suffocation, succeeded by cough and an expectoration of cream coloured mucus, to the quantity of a quart in an hour, with coldness of the extremities, lividity of the countenance, and a death-like moisture over the whole body. These attacks lasted six or eight hours, were relieved by emetics, and disappeared, without leaving a trace behind.

At this time, he began to complain of palpitations of the heart; yet, it is probable, that he had been affected with these before, since he was unaccustomed to mention any complaint, which was not sufficiently distressing to require relief. He experienced a difficulty of respiring, as he ascended the stairs, and became remarkably susceptible of colds, from slight changes of clothing, moisture of the feet, or a current of cold air. His sleep was unquiet in the night, and attended with very profuse perspiration; and, in the latter part of the day, a troublesome heaviness occurred. The sanguiferous vessels underwent an extraordinary increase, or, at least, became remarkably evident. The pulsation of the carotid arteries was uncommonly strong; the radial arteries seemed ready to burst from their sheaths; the veins, especially the jugulars, in which there was often a pulsatory motion, were every where turgid with blood. The countenance was high coloured, and commonly exhibited the appearance of great health; but, when he was indisposed from catarrh, this florid red changed to a livid colour; which also, after an attack of epilepsy, was observable for two or three days on the face and hands. This livid hue was often attended, under the latter circumstances, with something like ecchymosis over the face, at first formidable in its aspect, and gradually subsiding, till it had the general appearance of an eruption, which also soon vanished.

These symptoms increased, almost imperceptibly, during the five first months of the year 1808. Much of this time was passed in close application to official duties; and it seemed

seemed that a constant and regular occupation of the mind had the effect of obviating the occurrence of any paroxysm of disease, as well of epilepsy, as of difficult respiration; and that a very sudden and disagreeable impression generally produced either one or the other. There were, indeed, independently of such circumstances, some occasional aggravations of those symptoms. Some nights, for example, were passed in sitting up in bed, under a fit of asthma, as it was called; sometimes the mind became uncommonly impatient and irritable; the body gradually emaciated; yet the appetite and digestive functions remained principally unimpaired; and persons around were not sensible of any material alteration in the condition of the patient.

On the approach of warm weather, in June, the violence of the symptoms increased. Paroxysms of dyspnœa occurred more frequently, and were more distressing. They commenced with symptoms of slight febrile affection, such as hot skin, hard, frequent, and more irregular pulse, disordered tongue, loss of appetite, and derangement of the digestive functions. This kind of paroxysm lasted two or three days. Evacuations of blood from the nose and hæmorrhoidal vessels, which before rarely occurred, became frequent; a fulness at the upper and right side of the abdomen was sometimes perceptible, formed apparently by temporary enlargement of the liver; the difficulty in ascending an eminence increased sensibly. In the intervals of these attacks, which were variable, but generally continuing ten or twelve days, the strength was frequently good, and accompanied by a great flow of spirits, and an aptitude, or rather ardour, for business.

Such was the course of this complaint until the latter part of August, when a very severe paroxysm occurred. It commenced, like the former, with febrile symptoms, but those more violent than before. The countenance became high coloured; the dyspnœa excessive, and rendered almost suffocating by a slight movement, or attempt to speak; the pulse hard, very irregular, intermittent, and vibrating; and the digestive functions were suspended. These symptoms soon increased to the highest degree. The respiration was so distressing, as to produce a wish for speedy death; the eyes became wild and staring. No sleep could be obtained; for, after dosing a short time, he started up in violent agitation, with the idea of having suffered a convulsion. During the few moments of forgetfulness, the respiration was sometimes quick and irregular,

sometime

sometimes slow, and frequently suspended for the space of twenty-five, and even so long as fifty seconds. At the end of three days, the febrile heat was less permanent; the red colour of the face changed to a death-like purple; the hands and face were cold, and covered with an adhesive moisture; the hardness of the pulse diminished, and a degree of insensibility took place. I seized this opportunity to examine the region of the heart, which had not been done before, from fear of alarming the active and irritable mind of the patient. The heart was perceived palpitating, obscurely, about the 7th and 8th ribs; its movements were very irregular, and consisted in one full stroke, followed by two or three indistinct strokes, and sometimes by an intermission, corresponding with the pulse at each wrist. The pulsation was felt more distinctly in the epigastric region. During this paroxysm, a recumbent posture was very uneasy, and the patient uniformly preferred sitting in a chair. When the recumbent posture was assumed, the head was much raised, inclined to the right side, and supported by the hand; the knees were drawn up as much as possible. He could not bear an horizontal posture; nor did he ever lie on the left side, except a short time after the application of a blister. At the end of the fifth day, his sufferings abated, but the sudden affusion of a small portion of a cold liquid on the head produced a severe fit of epilepsy. This was followed by a return of the symptoms equally distressing, and more durable, than in the first attack.*

This violent agitation gradually subsided, and was followed by a pleasant calm. The natural functions resumed their ordinary course; his appetite returned; his enjoyment of social intercourse was unusually great; and he amused and instructed his friends by the immense treasures of information, which his talents and observations had afforded him, and which, he seemed to feel, would soon be lost. At the end of September, the feet began to swell, and after some time, the enlargement extended up to the legs and

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* During this time, it was thought adviseable to acquaint his friends, that an organic disease of the heart existed, which doubtless consisted in an ossification of the semilunar valves of the aorta, attended, perhaps, by enlargement of the heart; that the disease was beyond the reach of art, and would prove fatal within three months, possibly very soon; that if it lasted so long, it would be attended by frequent recurrenees of those distressing symptoms, general dropsical affections, and an impaired state of the mental faculties.

and thighs, and increased to an extraordinary degree; the abdomen next swelled, and, after it, the face. Toward the end of October, there were some indications of water in the chest; there was a constant shortness and difficulty of breathing; the cough, till now rare, became more frequent and troublesome; the contraction of the thoracic cavity rendered the action of the heart more painful, to that beside an uniform stricture across the breast, he sometimes described a dreadful sensation like twisting of the organs in the thorax. He suspected the existence of water there, and was inclined to consider it as his primary disease, but was easily convinced of the contrary. At one time he had a suspicion of a complaint of the heart, and, although he had never heard of a disease of that organ, slightly intimated it to one of his friends, and mentioned a sensation he had experienced in the chest, which he compared to a fluid driven through an orifice too narrow for it to pass freely. In this month, beside the dropsical affections and increase of cough, he had occasional painful enlargements of the liver, frequent starting up from sleep, a slight degree of dizziness, a great disposition for reveries, and sometimes extraordinary illusions, one of which was, that he was two individuals, each of whom was dying of a different disease. This idea often occurred, and gave him much uneasiness. He was also afflicted with long continued frightful dreams, and sometimes a slight delirium.

After the use of much medicine, on the 6th of November, the effused fluids began to be absorbed, and passed out through the urinary organs with such rapidity, that on the 12th the dropsical enlargements had nearly disappeared. The pulse was much reduced, in hardness and frequency, by the medicine, and, as it fell, he became more easy. On the 10th, the state legislature convened, and the call of business roused, like magic, the vigor of his mind; and the symptoms of his disease almost disappeared. During this session, he made little complaint, dictated many important communications, and attended to all the duties of his office, without neglecting the most minute. As soon as the legislature adjourned, he declared, that his work was finished, and that he had no desire to remain longer in this world. He entreated that no farther means should be used to prolong his existence, and immediately yielded himself to the grasp of disease, which appeared waiting with impatieuce to inflict its agonies.

From this moment, the distressing difficulty of breathing had very slight remissions. The consequent disposi-

tion to incline the superior part of the body forward, for the purpose of facilitating respiration, increased so much, that he freqnently slept with his head reposed on his knees. The cough became occasionally very violent, and was always attended with an expectoration of a brown coloured mucus, sometimes tinged with blood. The abdominal viscera lost their activity. The face was sometimes turgid and high coloured, at other times, pallid and contracted. A gradual abolition of the powers of the mind ensued, with a low delirium, and two short fits of phrenzy. The state of the circulation was very variable; the pulse at the wrists principally hard and vibrating, rarely soft and compressible; the less pulsations becoming more indistinct, and, at length, scarcely perceptible. No perfectly distinct beat of the heart was felt, but a quick undulating motion, not corresponding with the pulse at the wrist. Three days before death, the arteries assumed this undulatory motion, corresponded with the motion of the heart, and, for forty-eight hours, lost the irregularity of pulsation.*

Once or twice the expiring faculties brightened. On the 30th of November he awoke, as if from death, conversed very pleasantly for two or three hours, and humorously described scenes, which he had witnessed in his youth.

On the 4th of December, came on the second attack of furious delirium. Insensibility, and great prostration of strength, ensued. The respiration became very slow, and obstructed by the accumulation of mucus in the lungs; the pulse very intermittent, then regular, and finally fluctuating. A hiccough commenced; coldness of the extremities and lividity of the face followed, and continued three days before death. On the 9th, the incurvated posture was relinquished, and the head sunk back upon the pillow; the respirations

* The celebrated Morgagni has recorded some cases of organic disease of the heart discovered by dissection, the symptoms of which do not exactly accord with those observed in this and the succeeding cases. It should be remembered, however, that many of the subjects of those cases were not examined by him, while living, and others but a very short time before death. But it appears, that, in the last stage of this disorder, some of the most important symptoms may be materially changed, especially the state of the pulse, dyspnœa and palpitations. Thus in the case related above, and in some others, the pulse became regular, the palpitations subsided, and the dyspnœa was less observable. The cases of that accurate anatomist, therefore, are not so contradictory of those related here, as might at first be imagined.

respirations then diminished in frequency, till they became only two in a minute; and at the end of twenty-four hours they very gradually ceased.*

Dissection, nine hours after death. *External Appearance.*—The whole body was much emaciated; the face pale and contracted. The hands were slightly œdematous. Discolourations, answering to the ribs, were observed on the thorax; many small purple spots, hard and prominent on the back; excoriations on the nates; and purple spots, resembling incipient mortification on the heel and toe.

Thorax.—The integuments of the thorax were free from fat: the cartilages of the ribs ossified in various degrees, some perfectly, others slightly. Upon laying open the cavity of the thorax, it was found to contain about three pints of water, the proportion being greatest on the left side.

The lungs were contracted into a smaller compass than usual, and were very firm to the touch. Their colour anteriorly was whitish, with small distinct purple spots; posteriorly, of a deep red, with similar spots. The right lobe adhered closely to the pericardium; it also adhered to the pleura costalis, by a great number of strong cords, which seemed to be elongations of the original adhesions. Some of them were nearly as hard as ligament, and many an inch in length. Internally, the lungs presented a very compact structure. Their cells were crowded with mucus, and their vessels filled with black blood, partly fluid, and partly coagulated. Some portions were firmer and more condensed than others, but no tubercles were discovered.

The pericardium, viewed externally, appeared very large, and occupied almost the whole space behind the opening, formed by removing the sternum and cartilages of the ribs. It was situated principally on the left side, and contained about double the usual quantity of water; but was principally filled by the enlarged heart, to which it adhered anteriorly about two inches, near its base. Its parietes were, in every part, very much thickened and hardened.

The heart presented nearly its usual colour and form, excepting on its anterior surface, which was somewhat discoloured by coagulated lymph. It was enlarged in bulk, to

* Governor Sullivan was born December 4th, 1744, and died December 10th, 1809.

to at least one half more than the healthy size. The auricles and ventricles contained coagulated blood. The tricuspid valves were in a sound state. The left auricle was double the usual size. The left ventricle was enlarged, about three times thicker and much firmer than usual. The mitral valves were very much thickened, and near the insertion of their columnæ, which were sound, cartilaginous, so that they were quite rigid, and the opening made by them, from the auricle to the ventricle, was scarcely large enough to admit the passage of a finger. The semilunar valves of the aorta were ossified at their bases and apices, and the portion intermediate, between the base and apex, partly ossified, and partly cartilaginous, so as to render the valves very rigid. The aorta was at least one half larger than usual, especially at its arch. The arteria innominata, the carotid, and subclavian arteries, were uncommonly large and thick. The coronary arteries were considerably ossified.

Abdomen.—The omentum was destitute of fat. The stomach distended with flatus on the pyloric side; its cardiac extremity, lying under the liver, was pressed down and contracted. The liver was shrunk; its tunic corrugated, as if it had been distended, and bearing marks of inflammation; its substance harder than usual; its vessels, when divided, pouring out liquid black blood. The gall-bladder was filled with bile. The kidneys were thicker, and more irregular in form, than is common. The abdominal cavity contained some water.

Head.—The bones of the cranium were unusually thick. The dura mater, which was thickened, and in many places bore marks of former inflammation, adhered to the bone at the vertex. On its internal surface, near the longitudinal sinus, there was a small ossified portion, half an inch long, and the eighth of an inch thick. The convolutions of the brain were narrow, and very strongly marked. The pia mater bore marks of pretty extensive inflammation, and adhered to the dura mater at the vertex. The cortical substance ran deep into the medullary part of the brain. The ventricles contained about double the usual quantity of water; their parts were all remarkably well defined. The vessels of the pia mater, over the corpora striata, were unusually injected with blood. The velum interpositum was very firm; the plexus choroides uncommonly thick, but pale; the opening from the right to the left ventricle large. The vessels of the brain were generally not much filled with blood.

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THE BLOOD appeared every where fluid, except in some portions of the lungs, and in the cavities of the heart. It was very dark coloured, perhaps more than ordinarily thin, and oozed from every part which was cut.

THE CELLULAR MEMBRANE, in all dependent parts, effused, when cut, a serous fluid.

This industrious and accurate Practitioner has just published, at Boston, a Collection of Cases of Organic Diseases of the Heart, from a comparison of which with other Diseases in some respects resembling them, he deduces the following Remarks.

MORBID changes in the organization of the heart are so frequent, as to have attracted the observation of those who have devoted any attention to the study of morbid anatomy. Derangements of the primary organ of the circulation cannot exist without producing so great disorder of the functions of that and of other parts, as to be sufficiently conspicuous by external signs; but, as these somewhat resemble the symptoms of different complaints, especially of asthma, phthisis pulmonalis, and water in the thorax, it has happened, that each of these has been sometimes confounded with the former. The object of the following statement of cases is to shew, that, whatever resemblance there may be in the symptoms of the first, when taken separately, to those of the latter diseases, the mode of connection and degree of those symptoms at least is quite dissimilar; and that there are also symptoms peculiar to organic diseases of the heart, sufficiently characteristic to distinguish them from other complaints.

The first notice of disorder is commonly from an irregular and tumultuous movement of the heart, which occurs some time before any perceptible derangement of the other functions. This irregularity slowly increases, and arrives at its height before the strength of the patient is much impaired, at least in the cases which I have noticed; and as the vigour of the patient lessens, the force of the palpitations diminishes. These palpitations are often so strong, as to be perceptible to the eye at a considerable distance. They are seldom most distinct in the place where the pulsation of the heart is usually felt. Sometimes they are perceived a little below; often in the episgastric region; and not unfrequently beneath, and on the right side of the sternum.

After the palpitations have lasted some time, a little difficulty of breathing, accompanied with sighing, is perceived, especially on any great exertion, ascending an eminence,

eminence, or taking cold, of which there is an uncommon susceptibility. This dyspnœa becomes, as it increases, a most distressing symptom. It is induced by the slightest cause; as by an irregularity in diet, emotions of the mind, and especially movement of the body; so that on ascending stairs quickly, the patient is threatened with immediate suffocation. It occurs at no stated periods, but is never long absent, nor abates much in violence during the course of the disease. It is attended with a sensation of universal distress, which perhaps may arise from the circulation of unoxygenated blood, or the accumulation of carbon in the system; for the countenance becomes livid, and the skin, especially that of the extremeties, receives a permanent dark colour. This dyspnœa soon causes distress in lying in an horizontal posture. The patient raises his head in bed, gradually adding one pillow after another, till he can rarely, in some cases never, lie down without danger of suffocation; he inclines his head and breast forward, and supports himself upon an attendant, or a table placed before him. A few hours before death the muscular power is no longer capable of maintaining him in that posture, and he sinks backward. The dyspnœa is attended with cough, sometimes through the whole of the disease, sometimes only at intervals. The cough varies in frequency. It is always strong, and commonly attended with copious expectoration of thick mucus, which, as the disease ad vances, becomes brown coloured, and often tinged with blood; a short time before death it frequently consists entirely of black blood.

The changes in the phenomena of the circulation are very remarkable, The sanguiferous system is increased in capacity; the veins, especially, are swelled with blood; the countenance is high coloured, except in fits of dyspnœa, when it becomes livid; and it is very frequently puffed, or turgid. The brightness of the eyes, dizziness, which is a common, and head-ache, which is a frequent symptom, and in some cases very distressing, are probably connected with these changes. The motions of the heart, as has already been stated, are inordinate, irregular, and tumultuous. The pulse presents many peculiarities. In some cases, probably where there is no obstruction in the orifices of the heart, it remains tolerably regular, and is either hard, full, quick, vibrating and variable, or soft, slow, compressible and variable. Most commonly, perhaps always, when the orifices of the heart are obstructed,

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it is vibrating, very irregular, very intermittent, sometimes contracted and almost imperceptible, very variable, often disagreeing with the pulsation of the heart, and sometimes differing in one of the wrists from the other.

The functions of the brain suffer much disturbance. Melancholy, and a disposition for reverie, attend the early stages of the complaint; and there is sometimes an uncommon irritability of mind. The dreams become frightful, and are interrupted by sudden starting up in terror. Strange illusions present themselves. The mental faculties are impaired. The termination of the disease is attended with slight delirium; sometimes with frenzy, and with hemiplegia.

The abdominal viscera are locally, as well as generally affected. Although the digestive functions are occasionally deranged, the appetite is at some periods remarkably keen. The action of the intestines is sometimes regular, but a state of costiveness is common. The liver is often enlarged, probably from accumulation of blood. This distention is attended with pain, varies much, and, in all the cases I have seen, has subsided before death, leaving the coats of the liver wrinkled, flaccid, and marked with appearances of inflammation, caused by the distention and pressure against the surrounding parts. An effect of the accumulation of blood in the liver, and consequently in the mesenteric veins, is the frequent discharge of blood from the hæmorrhoidal vessels. This occurs both in the early and late stages of the disease, and may become a formidable symptom. Evacuations of blood from the nose are not uncommon.

Dropsical swellings in various parts of the body succeed the symptoms already enumerated. They commence in the cellular membrane of the feet, and gradually extend up the legs and thighs; thence to the abdominal cavity, to the thorax, sometimes to the pericardium, to the face and superior extremities; and, lastly, to the ventricles and meninges of the brain. These collections of water may be reabsorbed by the aid of medicine; but they always return, and attend, in some degree, the patient's death.

There is no circumstance more remarkable in the course of this complaint, than the alternations of ease and distress. At one time the patient suffers the severest agonies, assumes the most ghastly appearance, and is apparently on the verge of death; in a day or a week after, his pain leaves him, his appetite and cheerfulness return, a degree of vigour is restored, and his friends forget that he has been ill.

ill. The paroxysms occasionally recur, and become more frequent, as the disease progresses. Afterwards the intermissions are shorter, and a close succession of paroxysms begins. If the progress of the complaint has been slow, and regular, the patient sinks into a state of torpor, and dies without suffering great distress. If, on the contrary, its progress has been rapid, the dyspnœa becomes excessive; the pain and stricture about the præcordia are insupportable; a furious delirium sometimes succeeds; and the patient expires in terrible agony.

Such are the symptoms which a limited experience has enabled me to witness. Others, equally characteristic of the disease, may probably exist.

From this description of the symptoms it would appear, that there could be no great difficulty in distinguishing this from other diseases; yet probably it has sometimes been confounded with asthma, and very frequently with hydrothorax. Some may think, that there is no essential difference in the symptoms of these diseases. The resemblance between them, however, is merely nominal.

The cough in hydrothorax, unlike that which attends organic diseases of the heart, is short and dry; the dyspnœa constant, and not subject to violent aggravations. An uneasiness in an horizontal posture attends it, but no disposition to incurvate the body forward. These are some of the points, in which these two diseases slightly resemble each other. Those, in which they totally differ, are still more numerous; but as most of them have been already mentioned, it is unnecessary to indicate them here.

It is probable, that the two diseases commonly arise in patients of opposite physical constitutions; the hydrothorax in subjects of a weak relaxed fibre; the organic diseases of the heart in a rigid and robust habit. The subjects of the latter affection, in the cases which have fallen under my observation, were, with the exception of one or two instances, persons of ample frame, and vigorous muscularity, and who had previously enjoyed good health. In nearly all these cases the collection of water was principally on one side, yet the patients could lie as easily on the side where there was least fluid, as on the other; which in the opinion of most authors, is not the case in primary hydrothorax. It should also be observed, that, in many of the cases, there was only a small quantity of water in the chest, and that in neither of them was there probably sufficient to produce death. May not primary hydrothorax be much less frequent than has commonly been imagined?

Idiopathic

Idiopathic dropsy of the pericardium may, perhaps, produce some symptoms similar to those of organic disease of the heart; but it appears to be an uncommon disorder, and I have had no opportunity of observing it. In the fourth case, a remarkable disposition to syncope, on movement, distinguished the latter periods of the disease, and might have arisen from the great collection of water in the pericardial sac.

The causes of this disease may, probably, be whatever violently increases the actions of the heart. Such causes are very numerous; and it is therefore not surprising, that organic diseases of the heart should be quite frequent. Violent and long continued exercise, great anxiety and agitation of mind,* excessive debauch, and the habitual use of highly stimulating liquors are among them.

The treatment of this complaint is a proper object for investigation. Some of its species, it is to be feared, must for ever remain beyond the reach of art; for it is difficult to conceive of any natural agent sufficiently powerful to produce absorption of the thickened parietes of the heart, and at the same time diminish its cavities; but we may indulge better hopes of the possibility of absorbing the osseous matter and fleshy substance deposited in the valves of the heart and coats of the aorta. A careful attention to the symptoms will enable us to distinguish the disease, in its early stages, in which we may undoubtedly combat it with frequent success.

Although it may not admit of cure, the painful symptoms attending it may be very much palliated; and as they are so severely distressing, we ought to resort to every probable means of alleviating them. Remedies, which lessen the action of the heart, seem to be most commonly indicated. Blood-letting affords more speedy and compleat relief, than any other remedy. Its effect is quite temporary, but there can be no objection to repeating it. The digitalis purpurea seems to be a medicine well adapted to the alleviation of the symptoms, not only by diminishing the impetus of the heart, but by lessening the quantity of circulating fluids. Its use is important in removing

* It has been remarked by the French physicians and particularly by M. Corvisart, physician to the emperor of France, that these organic diseases were very prevalent after the revolution, and that the origin of many cases was distinctly traced to the distressing events of that period.

moving the dropsical collections; and for this purpose it may often be conjoined with mercurials. Expectoration is probably promoted by the scilla maritima, which, in a few cases, seemed also to alleviate the cough and dyspnœa. Blisters often diminish the severe pain in the region of the heart, and the uneasiness about the liver. It has been seen, that the excessive action of the heart sometimes produces inflammation of the pleura and pericardium, and that the distention of the coat of the liver has the same effect upon that membrane in a slighter degree. Vesication may probably lessen those inflammations. When the stomach and bowels are overloaded, a singular alleviation of the symptoms may be produced by cathartics, and even when that is not the case, the frequent use of moderate purgative medicines is advantageous. Full doses of opium are, at times, necessary through the course of the complaint. The antiphlogistic regimen should be carefully observed. The food should be simple, and taken in small quantities, stimulating liquors cautiously avoided, and the repose of body and mind preserved, as much as possible.

To the Editors of the Medical and Physical Journal.

Gentlemen,

That superfœtation was an attribute of all animal bodies was not at all questioned by our medical ancestors; and even at this comparatively enlightened period, the majority of medical practitioners have, by no means, made up their minds on the subject. This indecision has been kept up by occasional instances of twins being born in different states of growth. A case of this kind having happened to me within this month, and there having been but few such placed upon record within the last age, I have taken the liberty of sending it for insertion in your Journal, with a few remarks upon the doctrine of superfœtation in general.

A woman was delivered of her fourth child with the usual phænomena; but with the after-birth, there came away a fœtus seemingly of five month's growth, dead, and considerably flattened, but not at all putrid, although the skin had nearly the colour of lead. The only reason the woman could offer for such an occurrence, was, that when

when five month's gone with child, she was so much frightened by a cow as to fall down. After that time, however, she never felt any particularly unpleasant sensation, although she had always been certain that she should have twins.

In every case of this kind that I have seen or heard of, the second fœtus has been much younger than it was in this instance. Here, however, we must allow, either that superfœtation had taken place, or that the woman had carried in her uterus a bulk of extraneous matter, which, reasoning a priori, we must have concluded, would inevitably have stimulated the uterus to contraction sufficient for its expulsion. The case, therefore, is interesting, inasmuch as it proves the great power which the living action going on in the uterus had, in enabling it to resist the stimulus produced by so large an extraneous body existing in its cavity.

There still, however, remain a few circumstances respecting superfœtation, which deserve notice.

No person who has attentively considered the anatomy of the gravid uterus, can for a moment suppose that superfœtation can happen after conception has taken place for some time, because it is impossible that the seminal fluid should get in contact with the ovarium; for not to mention the sides of the uterus being in perfect contact with the membranes within them, the semen could not by any possibility enter the cervix uteri, in consequence of its being stopped up by a gelatinous substance, so tough, that Dr. Hunter says, "upon attempting to pass a probe through it, the probe will as readily force its way through the hard substance of the uterus itself, as through the cementing jelly." We are not told, however, by any author, at what time this jelly is thrown out by the cervix, so that we do not know how long after conception the os uteri remains open.

Dr. Hamilton states, that "bitches from admitting a variety of dogs while they are in season, will bring forth puppies of these different species." This he explains, by the fact of the uterus of brutes being divided into cells or horns. Such an explanation, however, must be nugatory; because, although the uterus is divided into two or more cornua, there still is but one cervix uteri, which, as it is of course stopped up soon after conception takes place, would as certainly hinder the occurrence of a second conception, as in the human subject. Dr. Hamilton indeed, says, likewise, that "the ova in brutes do not attach themselves

themselves to the uterus so early as in the human subject, but are supposed to receive their nourishment for some time by absorption.

This however, is an assertion most certainly without the smallest proof, and in my mind, without the smallest probability; nature never makes a variety in particular structures, unless it is to answer some end;—and why should not the ovum of an animal attach itself to that animal's uterus, as soon as the ovum of the human creature to the human uterus? There is, however, I believe, upon record, an instance of a black woman in America, bearing full-grown twins, one being a black child, and the other a mulatto. This case clearly puts Dr. Hamilton's distinctions between the human species and other animals out of the question. How, therefore, are these occurrences to be explained? Let us recur to the known facts attending conception; perhaps, we may then be led to conclusions concerning superfœtation, which have not, as yet, been published by any author on the subject.

Conception it would seem, is a work of time.—We know that the seminal fluid will take some time in passing along the Fallopian tubes to the ovarium; it is well known also, that the ovum is a considerable time in passing backwards into the uterus. The precise time, indeed, is unknown, but in bitches it must be considerable, perhaps some days, because we know, that before the ovum enters the uterus, there is that peculiar fluid or coagulable matter thrown out by its internal surface, which, as the fœtus descends, covered by its chorion and amnion, forms the decidua vera and decidua reflexa.

This gelatinous flaky matter will prevent the application of fresh semen to the remaining ovarium, as certainly as the jelly stopping up the cervix uteri, which probably, indeed, is thrown out at the same time, therefore, *after* this time, a fresh conception is impossible. We must, however, conclude, that *before* this matter is thrown out, seminal fluid in a second connexion, may find its way into the remaining horn of the bitch's uterus, or (by parity of reasoning) into the remaining Fallopian tube of the human uterus; and that, therefore, we may strictly say, that superfœtation *can* take place in the very early stages of pregnancy, although not after the ovum is fairly lodged in the cavity of the uterus.

H.

February 24, 1810.

Dr.

Dr. ALDER's *Proofs of his Theory from the remote Causes of Diseases and Fevers.*

(In Continuation.)

IN the early part of these communicaitons, I took tolerably full notice of the sources and prevalence of bad air; but this was done with a view to shew the application of this in cases where " contagion" was supposed to be the chief cr sole agent in the production of diseases, and to point out the great similarity (I may say *identity)* in certain fevers, obviously owing to bad air, and almost generally or altogether attributed to it; and others, in which the application of bad air is not so evident, and which (partly from that circumstance, and partly from their prevailing more extensively) have, till within these few years, nearly universally, and now are very generally, particularly in Europe, attributed to contagion. It was written also with the view of shewing how destructive it would be to our commerce, and consequently to the kingdom, to enforce quarantines under many circumstances which have happened, and are likely to occur again in such a way as our present most prevailing febrile-contagion doctrines require it to be enforced; or in any manner indeed, which at all approaches to such a way: but my subject now requires me to write with a more undivided and definite object; and I have something more to add.

I must first refer the reader to what I have there written, and then I will ask him, if the following abstract of some of the more interesting articles in Mr. Webster's invaluable History of Epidemics, do not support most of my chief positions?

I do not know that my readers will at first clearly perceive what the meteors, droughts, &c. there mentioned prove; but I will point out what they seem to me to demonstrate, either as I go along or afterwards; and I shall at the same time offer such other observations as shall seem demanded by my present subject. I shall begin with Mr. Webtser's history, at the year before the Christian æra, 433.

B. C. 433, 4, 5. Great heat of the earth preceded the plague Thucidydes describes. Earthquakes attended it, preceded, and followed it. Violent ones followed it for two years, and extended all over the earth. The plague too was very general; but it was worse at Athens, from the people being there crowded up in hot weather, and desponding. Rome had had a plague a year or two before; but it was subject to plagues, owing, no doubt, to the

marshes and mephitic caverns near it, and to the cause of the many earthquakes which happened near it.

After the Christian Æra, 165, 6, 7; and more or less till 173, 5, 8, and afterwards. During all this period there was an immense mortality over the face of the then known world, with many earthquakes in various places, much putrefaction and unwholsomeness in the seasons, and often famine. They happened in a great measure in the time of Marcus Aurelius and Lucius Vera; and are mentioned by the learned Dr. Arbuthnot, and a late writer (as well as myself) as destroying half the human race in the time of *Marc Anthony*; Dr. Arbuthnot led me into the error; Marcus Aurelius was called Marcus Antoninus. It is computed they destroyed more than half of the human race.

From 250, at intervals, till 263 or 266. For about seven years before this, the earth was agitated by most violent earthquakes; and about two years before, the sea rose to a most unusual height on the Eastern coast of this kingdom, and overflowing some hundred thousand acres in the county of Lincoln, all of which, at this day, have scarcely been quite recovered. Earthquakes too followed the plagues; an eruption of mount Ætna preceded, and an eruption of mount Vesuvius followed them. The plagues which prevailed in these times destroyed about half the human race. They were most fatal at Rome in 252 and 263, and in Scotland in 266. The air in some places was remarkably thick and impure, causing great darkness, and a deposition of putrescent dew.

407, 8, et seq. Prodigious meteors, violent and numerous earthquakes; heat of the earth, which destroyed vegetation, and caused extensive and severe famine. Then pestilence, which, according to Nicephorus, destroyed almost all Europe, and a considerable part of Asia and Africa.

In 445, 6, 7, 8, 9. Tremendous earthquakes for many months, over a great part of the globe. At Constantinople, in particular, very early, severe, and long, and often repeated. Dreadful plagues, not only there, but universally, and of several years duration. Very severe in England in 448 and 9.

From 543, during 50 years, the plague travelled all over the world, sometimes going progressively, sometimes making a circuit. But much worse at some times, and in some places, than in others. Procopius says, it did not spread *by contact*, and on that account people were emboldened to wait upon the sick, and bury the dead. Yet it attacked people of all ages and descriptions, and in all situations, and almost depopulated the world. It often travelled *in a*

very

very narrow compass, (according to Evagreus) *leaving many places untouched,* afflicting others not far off very severely. At first it passed slightly over several cities, *it attacked the half of others,* in some only a few houses, but in thers it scarcely left an inhabitant.

From this time to the year 1000, there were seven or eight general plagues, with their usual attendants, earthquakes, volcanic eruptions, unwholesome seasons, &c.

In 1000 we have the first account of the eruption of Mount Heckla. It emitted two meteors like globes of fire. These were followed by severe earthquakes in England, by a very cold winter, and in summer by fluxes, epidemics, and mortal fevers.

In 1004 an eruption of Heckla and a violent earthquake. In 1005, earthquakes in Italy for three months. Then a famine and plague over the whole earth for three years, which, according to contemporary authors, appeared to destroy more than one half of the human race. Afterwards Vesuvius poured out immense quantities of lava.

In 1174 we find the first epidemic catarrh mentioned.

In 1196, in England a universal and very fatal epidemic prevailed, called a burning ague; it came on after heavy rains, which caused a dearth, and with an earthquake and singular fiery appearances in the sky. A similar ague had been epidemic here before.

In 1274, the rot in sheep was first taken notice of in England.

In 1346, or a little earlier, a fœtid destructive vapour is said to have broken out of the earth in Cathay in China, which caused a most extensive plague. It is certain this plague appeared in 1346, in Egypt, Syria, Turkey, and Greece; and in 1347 in Sicily, Pisa, Genoa, and other parts of Italy; and in 1348 in the South of France, first at *Avignon* (which is at a distance from the sea), then in the other parts of the kingdom, and in the southern provinces of Spain. At the close of the same year it made its appearance in England, first in Dorsetshire, and soon travelled all over the kingdom. In 1349 it over-run Ireland, Holland and Scotland; and in 1350, all Germany, Hungary, and the North of Europe. It raged in winter as well as in summer, even in the North of Europe. It was preceded and attended by many unusual phenomena. In 1347 a frightful comet appeared. During the prevalence of the disease the whole earth was shaken by most tremendous earthquakes. All Germany was shaken in 1346. In 1349 Italy was shaken, and Sicily to its foundation. In Greece many cities were overthrown. Over Avignon in France, a pillar of fire

wa seen for an hour; but the seasons after were very moist. It was very fatal in Greenland and Iceland; also at Avignon, Montpellier, and Marseilles, especially among the monks; the Clergy in England too suffered much. A bad typhoid pneumonia is said to have prevailed epidemically with this, but it probably was no more than a modification of the other. Cattle, fowls, and even fishes were affected. Brabant and Milan escaped this pestilence, and so did several high places.

In 1354 an epidemic madness prevailed in England.

In 1361 a general plague prevailed; it was unlike almost all others, as it was as violent in country houses as in towns, and was most violent in *mountainous districts.* In 1373 an epidemic madnes reigned among the lower order of people in England. In 1374 it prevailed in France and Italy.

In 1485, the sweating plague in England seized Englishmen first and *chiefly*; but it attacked people of *all* countries, and in *most* of them. The *common* plague was epidemic in Italy and Germany *previous* to it, and Denmark *while it prevailed.*

In 1490 an epidemic leprosy, causing ulcers from head to foot, prevailed in Germany, and an epidemic elephantiasis had, long before, reigned in Italy.

In 1510, after an eruption of Mount Heckla, a catarrh spread universally through Europe.

In 1515, a malignant catarrh or pneumonia, ravaged Holland, and often killed people in a single day.

In the spring, 1517, a similar disease was epidemic in England; *and this by Midsummer became the sweating sickness.* These two are said to have destroyed half the people in England. In 1540, a pestilential ague and a dysentery were epidemic and mortal in England.

In 1557, fevers were epidemic generally. In 1558 an epidemic dysentery prevailed in France; and epidemics and semitertians in Holland.

In 1576, while an epidemic reigned (among other places) in Verona and Padua very severely, Vicenza, *which lies between them,* escaped, and was not attacked till the following year.

In 1580, a very fatal catarrh seized Sicily, and in a few months spread all over Europe.

In 1591, one of a similar kind prevailed as universally, *and was the immediate forerunner of the plague.*

The year 1600 was remarkable for a pestilence in almost every part of Europe, which continued for two or three years,

years, and caused great mortality. Subterraneous fires, and famine, prevailed at the same time.

In 1610 there was an epidemic catarrh, which the Spaniards say was the first that visited them.

In 1618 and 1619, the yellow fever made great ravages among the American Indians. In the following years it attacked the Indians also, and the new settlers, and since then often.

From 1620 to 1660, the plague and other epidemic diseases, (with earthquakes and volcanic eruptions, &c.) were frequent and fatal all over Europe and in America. In Europe they began in Hungary, and spread *along the Danube,* and afterwards *along the Rhine.* The same continued (though with less violence, except eruptions from Mount Etna, which lasted for years) *till many years after the plague in London in* 1665 *and* 6. Of what happened in Africa and Asia we have little account. In 1663, there was in England, a memorable mortality among cattle and sheep; *the liver, and sometimes the lungs, having worms.* In 1664 many cattle died. In 1665 the plague appeared in Holland and England. In London, *pneumonia was epidemic in winter, having succeeded bad epidemic tertians. A pestilential fever raged in the spring; and the plague at Midsummer. As it subsided, the dysentery and other diseases were again epidemic.* From all this it is clear, that one great cause, operating differently, according to seasons, &c. produced all these complaints, both in cattle and in men.

In 1682, a mortal disease spread among the cattle in Italy, Switzerland, and Germany, called Angina Maligna. Cattle died of it in twenty-four hours. In Germany and Poland it often travelled very slow, sometimes not more than *half a mile in an hour*: so that it often took as much time to travel *ten* miles, as the epidemic influenza which attacks the human species does to go *one hundred* or many more. The slowness of its progress shews either that the cause of it was heavy and confined near the ground, when the current of air could affect it but little; or that the air was calm, *or both;* which last is most probable, as it is not certain that it arose altogether from the ground.

On the 10th of January, 1693, a most terrible earthquake shook Sicily and Naples. The sky from serene became obscured with a vapour of a *reddish or yellow hue.* Malignant fevers, small-pox, madness, dullness, sottishness, and melancholy with delirium and lethargy immediately followed. Another earthquake happened a little before this; and another occurred in 1693, in Banda, in

 the

the Indian Sea; and after both, *a sulphureous smell* was perceived. In 1695, *apoplexy was epidemic in Italy.*

From 1702 to 1711, the plague prevailed in many parts of the north of Europe, after, and partly at the same time with the plague in the Levant, and the bilious fever, &c. in America. Earthquakes and volcanic eruptions occurred as usual on such occasions. In 1711 also, a very fatal disease raged among the cattle in Italy.

In March, 1719, an immense meteor passed the heavens, illuminating the earth, and bursting with a tremendous report; its diameter was calculated by Dr. Halley at a mile and a half. In Europe, malignant fevers were prevalent, and the mortality great. In 1718, 19, 20, and 21, fatal fevers took off numbers who lived near the slaughter-houses in Cork. In 1719, 20, and 21, the plague prevailed at *Aleppo*, and *(contrary to what is usual)* came from the north. In 1720 and 21, the plague was very destructive at *Marseilles and other places in France.* Earthquakes and volcanic eruptions during this period, and about it, *were frequent.* In 1723, in some districts in America, the burning ague was fatal, but was partly owing to a local cause, viz. *draining swamps.*

In 1729 and 30, *a catarrh marched all over Europe in five months,*—much too short a time to allow it to do so by contagion.

In 1733, a catarrh spread all over Europe, and probably nearly all over the earth. In 1734 and 1735, many diseases were epidemic in Britain, and earthquakes were felt there. In 1736 and 7, an ulcerous sore throat and a malignant pneumonia were epidemic in France. And at the same time a very malignant sore throat travelled in America from East to West. Cold and wet weather greatly increased it. The plague too, about the same time, was very fatal in Egypt. In short, epidemics were remarkable; and earthquakes, volcanic eruptions, and meteors equally so. In 1738, *in England, vertigoes, apoplexies, and sudden deaths were very common.* Oczackow also, Barbadoes, and New Spain had the plague. From 1740 to 1744, pestilential diseases prevailed throughout all the known world. The European catarrh of this period spread over England *in a few weeks*; it came from the South. Earthquakes, volcanic eruptions, and meteors were frequent.

From 1759 to 1762, the plague was very fatal in several places of Europe, Asia, Africa, and America; prevailing with earthquakes, volcanic eruptions, &c. as before. After it declined, dysenteries, and sometimes pleurisies were epidemic in several places for some years. In 1771 and 2,

after

after great earthquakes, &c. there was a plague at Constantinople, and in Poland, Russia, and other places.

In June 1783, an eruption began from Mount Heckla, and it continued with violence for several months: it was *preceded by a drying-up of the springs, and a great fog over Iceland for many months;* which, at last, spread *over Europe,* and gave great alarm: and not without cause, for the influenza *soon followed; and then other diseases and earthquakes in various parts.* The Nile at this time did not overflow as usual; and the plague was very mortal in Egypt.

At the end of the year 1787, eruptions happened from the mountains Etna and Vesuvius: and early in the year 1788, the influenza broke out in Sicily, Italy, and Germany; and soon reached Poland, Russia, Britain, and France. There was great mortality in the East of Europe.

In the next year *crops failed over the whole Earth*; and in July there was a *tremendous earthquake,* which was principally felt in Iceland. Then *almost all the haddocks in the North Sea died.* In October, *Mount Vesuvius was in a state of eruption* for several weeks. In America there was great *darkness* in Kentucky. The influenza appeared soon after, and then the scarlet fever.

1791, 2, and 3, were pestilential years in many places, preceded by earthquakes, and followed by a great eruption of Mount Vesuvius.

In 1796, several parts of America were sickly; and early in the year following, earthquakes and volcanic eruptions were very tremendous in South America. Soon after, a great mortality was observed *among fish and cats.* Then, in summer, the bilious plague began, and continued in autumn. After that, dysenteries, the influenza, pneumonia, and scarlet fever prevailed, and continued during winter. In 1798, the bilious plague was very general in America early in autumn, or after great rains, and with extremely sultry weather; and an earthquake of considerable extent followed it. But I have not convenient room here to do Mr. Webster full justice. He has mentioned many other important circumstances; and particularly, that the following phænomena were usually joined (some or more of them) with epidemic sickness, as well as earthquakes, meteors, and volcanic eruptions; viz. comets, heat of the earth and dryness; drying-up of the springs; failure of crops; famine; very unusual seasons in other ways, sometimes very moist or wet; thick fogs or darkness for days or weeks; fœtid clouds or dews; much putrefac-

tion; the generation of many insects; great armies of locusts; the death of cattle, sheep, or cats, &c.; the flight of birds; great sickness and mortality among fish; *looming, &c. in the air*; great swelling of the sea, &c.; and many of these circumstances I find noticed by other authors, more than by Mr. Webster. I shall beg leave to examine how these concomitant circumstances are connected in my next.

I am, &c.

THOMAS ALDER.

(To be Continued.)

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I Did hope that some more able pen would ere now have been employed in marking what I consider the inconsistencies and erroneous notions in some of Dr. Roberton's late papers, which, though trifling perhaps in themselves, are remarkable in coming from one of his assumed acumen, and who is so often adverting, with no little severity, to the faults, or supposed inaccuracies and misapprehensions of others. I shall confine myself in these remarks more particularly to his paper on hydrocephalus, which appeared in one of your late Numbers. He is pleased there, very erroneously I hope, to call this the disease of children, "now," as he gravely asserts, "that the small-pox has been driven out of this Country."—The small-pox driven out of this Country!—Here we have one of those loose and sweeping assertions, so frequently occurring in the Doctor's papers. Again, "that as many, if not more, die of it than even died of the small-pox," is another of his bold assertions, which every practitioner will know how to appreciate.

Doctor R. entitles his paper "Original Remarks on the Pathological Theory and Practical Treatment of Hydrocephalus Internus, illustrated by cases, &c." So conspicuous a title was well calculated to catch the attention of your readers, and I confess I was one of those who entered upon it with great pleasure, hoping that it might lead to a surer discrimination and more successful practice in that too often fatal malady. But seldom, surely, was attention

more

more ill bestowed, or expectation more severely disappointed. For after passing through an introduction, to me at least most truly unimportant, we are led on to a detail of cases, which, generally speaking, are clearly referable to another source of disease; and instead of being illustrative of the disease in question, are calculated only to confound it with other infantile ailments.

According to the "Pathological Theory" of Dr. Roberton, we are, on every occurrence of fever in children, with apparent head-ach, torpid bowels, or dark coloured stools, to act under the idea of the presence of hydrocephalus; and without further consideration, doom the little sufferer to a severity of treatment which its case, perhaps, by no means required. For how often do we meet with cases, such as he has described to us, giving way to active purgation alone? From whence we conclude, that the head, if at all, was not primarily affected; and that the "cap blister" might oftentimes have been well dispensed with. The doctor in his remarks, proves to us, that it is an easy matter to make a confident assertion; but to be able to discern and to paint to the view of others, "the distinctive physiognomy of diseases, the sort of shade between sameness and difference in symptoms," is another consideration, which he does not care seemingly to involve himself with. "He considers all the diseases of children to be hydrocephalus," as Dr. Fogo has well observed.

Dr. Roberton, as if to complete his subject, goes on with it in the two succeeding Journals, in his "Reports of the Diseases of Edinburgh." At length, he thinks he has said enough, and then sums up by asserting that he has given us "a new view of this disease, and a very effectual mode of subduing it." Surely Dr. Roberton cannot be dealing seriously with us. As to his new view, we have already examined it, and his effectual mode of subduing this disease, when it really exists, unfortunately consists only in that sort of treatment which has disappointed many an anxious practitioner before him. To conclude. We cannot suppose Dr. Roberton ignorant of the best Treatises which we have on this malady; and yet, with these in his recollection, it is hard to think what could induce him to publish his "Original Remarks;" or on what ground he could hazard so confident a proposition, as that just quoted. Does he court a comparison with any of the best writers who have preceded him on this subject? His fame we think would be no ways enhanced by bringing before him the Essay of the learned Dr. Whytt, published on this

subject

subject more than half a century ago; the stile and manner of which is well worthy of imitation.

The appearance of your last Number induces me to make one further observation. Dr. Roberton, I hope, before this paper meets his notice, will have read the excellent "remarks on the infantile fever," by Junius, in this number; and if he then persists in thinking that his own cases characterise hydrocephalus, we would recommend to him the reconsideration of the last sentence in his "Reports of the diseases in Edinburgh, for December. 1809," where he speaks of "mulish stubbornness," and "Scotish obstinacy." With what justice the Doctor applies these coarse epithets to his Countrymen, we will leave to the consideration of those who are better able to determine. True it is, that in himself, we have not that full manifestation of mental pliancy which might have been expected in one so suddenly sprung up from "the hot-bed of genius." But the "soil," we fancy, wants ameliorating, it being at present, as he tells us, "much calculated for the production of obstinacy." It may be so; but we have no proof of it in the writings or acknowledged conduct of those, who first and most adorned the great "Medical School" of Edinburgh; in the bosom of which, probably, the Doctor was nurtured; but he failed to imbibe, seemingly, that spirit of meekness, which the introduction to, and pursuance of our profession is so well calculated to inspire.

Observations on Mr. Davies's *Paper, on Uterine Hæmorrhage.*

The "cautionary hints," or rather practical dogmas, of your respectable correspondent Mr. Davies, on uterine hæmorrhage, are better calculated, in my opinion, to give strength and interest to the minds of the experienced, than "to prove useful," as he hopes they may, "to the junior practitioners in midwifery." The minds of young men are not to be formed, nor can their rules of practice be taken from such confined limits as Mr. Davies has assumed to himself in his paper. He did not, I dare say, think that his "Observations" should at all supersede more enlarged reading; but recommended as they are to the notice of the junior practitioners in particular, they inculcate, I think, a position or two of a dangerous tendency. To illustrate. "In other cases of difficulty," says Mr. Davies, "the practitioner has leisure to deliberate on the best mode of relieving his patient, without risking any conse-

consequences." As if to proceed hastily and indeliberately in this instance, were not risking the most serious consequences. I should advise the young practitioner, even in these cases, not to decide too hastily, or be afraid of deliberating on the best mode of relieving his patient. Let him, if he has an opportunity, call a consultation, rather than hazard his reputation in a too early attempt to deliver, which it is allowed, " in some cases will be attended with manifest discouragement." Let him not be persuaded to admit it as a general unqualified rule, that, " the sooner an attempt is made to deliver, the greater probability there will be of saving his patient." Cases, no doubt, do and will occur, where " the violence of the symptoms demand immediate help," where delivery must be proceeded in without waiting for pains, or for any considerable dilatation of the os uteri. It is hardly possible for the most able to lay down rules that will adapt themselves to every variety of case that may fall out in practice. It may be argued on the one hand, that " delays are dangerous," and on the other, that " proper delays will be advantageous."

But, after all, every thing must depend upon the individual view of the attending practitioner; though, it is a good general maxim, " to take as much time as symptoms will permit." A strict examination as to the attachment of the placenta, and a mind well stored with the facts and observations contained in Dr. Rigby's excellent pamphlet on "Uterine Hæmorrhage," will best serve a young man in these anxious cases.

As to the " deplorable case" to which Mr. Davies alludes, I know nothing; and with that gentleman, most sincerely do I hope I never may. It seems, however, that such cases have occurred in practice, and are acknowledged by the " best authorities," and it is well therefore that practitioners should be apprized of the chance of meeting with them.

Is it a fact, as we have long been accustomed to consider it, that in cases of placenta presentation, the hæmorrhage uniformly increases in proportion to the dilatation of the os uteri, and that nothing consequently is so much to be dreaded as the natural progress of the labour? If so, whence is it, that we hear of cases of hæmorrhage from the same presentation proving suddenly fatal, before the os uteri shews any disposition to dilate, or while it is " incapable of any dilatation whatever?"

I am, &c.

Duffield, Feb. 15, 1810. SAMUEL SPENCER.

GALVANISM.

Extract from a Memoir presented to the Class of Mathematical and Physical Sciences of the National Institute of France. By M. M. GAY LUSSAC and M. THENARD.

(From the Journal de Physique.)

M. M. GAY LUSSAC and THENARD, having proceeded to the decomposition of the boracic acid by the metal *potassium*, attempted in like manner the decomposition of the fluoric and muriatic acids, with the constituent principles of which we were as yet unacquainted. What was done with respect to the fluoric acid, and the principal results to which they have conducted us, as at present published by these philosophers, are here recorded.

Our first attention, say they, was to obtain the fluoric acid in a state of purity; but as this acid does not exist but in a state of combination with lime, and that we have hitherto been unable to separate the two, without their entering into combination with other bodies, we have been under the necessity of making a considerable number of experiments, which has given the opportunity of ascertaining many facts, the most remarkable of which are as follow. When we brought potassium into contact with the fluoric acid gas, which becomes disengaged in an iron tube made red hot, containing fluate of lime and vitreous boracic acid, there thence result vapours of considerable density, similar to those formed from the combination of muriatic acid gas and ammoniacal gas. It yields them equally with every other gas, excepting with the muriatic acid gas, provided these have not been freed from moisture. But it alters the transparency of none else of them after they have been for some time in contact, whether it be with lime or with muriate of lime.

In the first case, when there is a production of dense vapours, the volume of the gas diminishes equally, and only a few hundredths of the centigrade thermometer. In the second case, when the gases preserve their transparency, their volume is by no means changed. We therefore conclude from hence, that the fluoric acid gas is an excellent test of the presence of moisture, or an hygrometric test in gases, and that all gases contain moisture, except the muriatic acid gas, the fluoric acid gas, and perhaps ammoniacal gas. It is hence, that in exposing the

the muriatic and fluoric acid gases to a degree of cold of 15° or 19°, nothing is deposited, excepting a few traces of liquid; whilst on exposing the sulphureous acid gas, carbonic acid gas, &c. at the same degree of cold, it suddenly deposits the same quantity of aqueous moisture.

The dense vapours produced by the fluoric acid, in gases which contain water sensible to the hygrometer, betray, with respect to it, a great affinity for such water, so that it would not be exaggerating too much to say, that it would absorb more muriatic acid, and probably more than 2000 times its volume. When water is thus saturated, it is limpid, fuming, and more caustic. We obtain from it, by means of heat, more than one-fifth part of what it contains, and whatever methods are afterwards taken, it is not possible to obtain a greater proportion. It therefore resembles the concentrated sulphuric acid, and has both its causticity and aspect; like that, it does not enter into a state of ebullition, except at a much higher temperature than that of boiling water, and it is entirely condensed in *striæ*, although it may probably contain 600 times its volume of gas. Is it not extremely probable after this, if not even demonstrated, that the sulphuric and nitric acids should be gaseous if pure, and that they do not owe the liquid state in which they appear to any thing but to the water which they contain?

Although our fluoric acid gas has a great affinity for water, and that it contains none of it because it is derived from substances perfectly free from moisture, nevertheless, we neither know how to dissolve, nor how to render gaseous the minutest portion. We have put into contact for many hours over mercury, a litre of fluoric acid gas with one drop of water, and this drop, far from disappearing, augmented in volume. It is thus therefore proved, that this gas could contain water in no other way, neither as sensible to the hygrometer, nor in a state of combination.

Ammoniacal gas is precisely in the same situation, at least with respect to the water of combination. But this is by no means the same with respect to the muriatic acid gas; in truth, it contains no water sensible to the hygrometer, but it contains water in a state of intimate union, as was first shown by M. M. Henry and Berthollett. We have even obtained, by causing muriatic acid gas at a gentle heat to pass over litharge fused, and reduced to a gross powder, this water, and caused it to collect, which formed about one-fourth of its weight, according to the experiments

periments which we have made upon the direct combination of a certain quantity of this acid gas with an excess of the oxyde of silver.

The other gases do by no means exhibit with water the same appearance as the preceding. None of them contain water in a state of combination, but all contain it, as indicated by the hygrometer. It follows then, from hence, that the fluoric and ammoniacal gasses neither contain water in a state sensible to the hygrometer, nor in a state of combination;* that the muriatic acid gas does not contain water, either in a state sensible to the hygrometer, or in a state of combination, and that all the other gasses simply contain water in a state sensible to the hygrometer.

What is more striking in these results is, to see that the muriatic gas contains water, and that the fluoric and ammoniacal gasses contain none whatever, and besides, to observe that the muriatic acid gas contains it in such proportion, that if it were entirely decomposed by a metal, all the acid would be absorbed by the oxyde, and become converted into a metallic muriate; it is the same, we may be assured, on passing the muriatic acid gradually, and in succession, through several gun-barrels made red-hot, and filled with iron turnings.

The more we reflect upon these phenomena, the more difficult it seems to be to account for them. Is it not possible that if oxygen and hydrogen be two constituents of the muriatic acid, that they may not be so in the form of water, but that they merely form it at the moment when this acid enters into combination with other bodies, so that in the muriates it would be in any other state than that of gas? However this be, one thing is certain, that all the muriates not decomposable by fire, and which contain little or no water, cannot be decomposed even at a very high temperature, either by the vitreous phosphate of lime, or the boracic acid, so that with respect to the muriates, their acid remains united with considerable force; and that if the sulphuric acid was itself deprived of water, it is more than probable that it could not itself decompose them. But let us not dwell too long on this hypothesis,

* It is certain, according to the experiments of Berthollet, jun. that ammoniacal gas does not contain water in a state of combination; but Gay Lussac and Thenard do not venture to assure us that it is not contained in a state perceptible by the hydrometer.

pothesis, but proceed to enquire into the properties of fluoric acid gas. We have already considered its physical properties, its action upon air, and upon the other gasses as well as water; let us now enquire into its action upon vegetables, which it acts upon with at least as great a force as the sulphuric acid, and appears like this acid to act upon them, in consequence of producing water and carbon; it also readily converts alcohol into good æther, a circumstance which we purpose more particularly to attend to, and it immediately blackens very dry paper exposed to its vapours, in consequence of the water formed and absorbed.

Every thing therefore proves that this fluoric acid gas is a perfect acid, not yielding in energy to any other with which we are acquainted, and that even in point of causticity it is equal to the concentrated sulphuric acid itself; and still it has no action upon glass. Until now we had considered it as being pure, but conceiving that it contained some substance which prevented its re-action upon silex, it readily occurred to us, that it held in solution a considerable portion of the boracic acid.

The fluoric acid obtained from the decomposition of fluate of lime by the boracic acid not being pure, we have attempted its decomposition by the acid phosphate of lime; we have been able only to obtain a small quantity, and the little which we have obtained, contained in the first place a small quantity of silex derived from the fluate of lime we employed, and in the last place a certain quantity of acid phosphate of lime itself. What is remarkable in this operation is, that when we employ siliceous fluate of lime, the decomposition of the salt is very rapid, in consequence of the action of the silex upon the fluoric acid, whence proceeds a considerable quantity of silicated fluoric acid gas.

Considering then that the fluoric gas proceeding from the fluate of lime and boracic acid contains no water, and that it is not capable of holding it in solution, we have conceived, against common opinion, that it is actually the case with such as is prepared in leaden vessels, by means of the concentrated sulphuric acid.

But instead of attaining, after this manner, this acid in a state of gas, we have obtained it in a liquid state, and possessed of the following properties. It exhales through the air a thick vapour, and in contact with water becomes hot, and even proceeds to the point of ebullition; it scarcely comes into contact with the glass but it erodes it;

becomes

becomes considerably heated, and finally, becomes converted to a silicated gas. Of all its properties, that of its action on the skin is the most remarkable. It scarcely comes into contact with it, before the organization is destroyed. A white speck is immediately perceived, and a considerable degree of pain succeeds. The parts adjacent to the point touched, speedily become white, and very painful, and in no long time after, a blister is formed, the sides of which have a white skin, very broad, and filled with pus.

How small soever be the quantity of acid, these phænomena equally occur; the developement of it is slowly made, and it is sometimes from seven to eight hours after it comes in contact, that it becomes observable; and although the burn be sufficient to produce considerable pain, to deprive one of sleep, and even excite fever; the effects of these kinds of burns are arrested, as we know by our own experience, by immediately applying after the accident, a weak solution of caustic potash, which we also know to be an excellent remedy for common burns.

We readily foresee that we are not to neglect to bring so active a liquid into contact with the metal obtained from potash. This experiment was performed in a tube of copper; we introduced a piece about the size of a hazel nut, of this metal, into a small quantity of the liquid potash, when a lively detonation instantly followed with considerable disengagement of light and heat.

When the metal potassium is thrown into liquid fluoric acid in a concentrated state, there is instantly disengaged a considerable portion of light and caloric, attended by the most vivid detònation; but afterwards, wishing to ascertain the cause of this phænomenon, the acid was gently poured over the metal, when heat was simply elicited, and the products of the experiment collected; those products were hydrogen fluate of potash and water, therefore the active liquid was a combination of water and fluoric acid.

We perceive therefore, that this acid has a tendency to combine with all bodies, and that it forms with them solid liquid or gaseous compounds, in proportion as it preserves its elasticity or expansive force; it is the only acid which has this property; and this circumstance alone is a proof that it is of all others the most active.

As we have no method of obtaining the fluoric acid pure, we cannot study it but in a state of combination with other bodies, only it is necessary to have it combined

with

with a particular body, according as we wish to obtain one result or another.

If it act by uniting with alcalies earthy metallic oxyds, it is necessary to prevent them from being acted upon by the silicated fluoric acid, or there would result tripple salts; it is thus, that in pouring ammoniac into the acid fluid of silex, we obtain a tripple salt, nearly insoluble, and in a considerable degree volatile; in like manner, by pouring the muriate of barytes into the acid fluate of silex, we obtain, after a short time, a crystaline insoluble precipitate in a considerable excess of nitric acid, which we may compound with the sulphate of barytes, and which is merely the fluate of silex and barytes.

But if instead of wishing to combine the fluoric acid with bodies, we would decompose its compounds by means of the metal potassium; it is then obvious, that we should not employ the fluoric acid in a liquid state, because the water contained in it, and which they would prefer, whether it be the fluoric gas holding in solution boracic acid, or rather the silicated fluoric gas, as the latter contains nothing combustible, it cannot lead us into an error, and cannot be prejudicial, except in consequence of the dispersion of the materials; thus it is, with respect to this gas, and especially with regard to the silicated fluoric acid gas, of which we have made use in our attempts to decompose the fluoric acid itself, and of which we proceed to give an account.

When we bring into contact at an ordinary temperature, the metal of potash with the silicated fluoric acid gas, it undergoes no sensible alteration, but simply becomes tarnished at its surface; but if we cause it to melt, it burns vividly, with intense light and heat; during this combustion there is a considerable absorption of fluoric acid, and a very slight disengagement of hydrogen gas, together with the production of a solid matter, the colour of which is a reddish brown. This matter, when treated with cold water, causes a disengagement of hydrogen gas, which does not however contain any portion of metal. If this matter be treated with cold water, and afterwards with warm hydrogen, it is disengaged in a much smaller quantity than in the former instance; and upon the whole, there is scarcely disengaged the third part of what was produced from the metal combined with water. If we connect the waters of ablution, and evaporate them, we shall obtain the fluate of potash with excess of alkali; and if we examine the residual after being well washed

it is always of a reddish brown, and we find it possessed of the following properties: when thrown into a crucible of silver, and heated to a cherry red, it burns with great vividness, and the disengagement of a minute portion of acid gas; although previously insoluble in water, it now becomes soluble; the part which dissolves it is the fluate of potash, and what remains insoluble is the fluate of potash and silex. If, instead of making this experiment in a crucible, it be made in a small bell glass, in contact with oxygen gas, so as to become gradually heated, the ascension is much more vivid than when in contact with the atmospheric air; there is an absorption of a great quantity of oxygen, and the remaining gas, after combustion, is pure oxygen, with a small portion of fluoric acid gas; the product is solid, as in the preceding experiment, being formed of fluoric acid, lime, and silex.

It is evident, however, that during the combustion of potassium in fluoric acid gas, there is little or no hydrogen disengaged; we cannot attribute this combustion to the water, so that in this experiment, either the fluoric acid is decomposed, or at least, combined with the metal without oxydating it. These two hypotheses being the only ones we are able to advance, we shall discuss them in succession. If it were the metal which combined entirely with the fluoric acid, there would probably result from it a very immaliable compound, and which, with the acid of water, would yield as much hydrogen gas as the metal itself; whereas, we did not obtain more than one-third part of what we should in this case have done; therefore a combination of this kind militates against all the facts of every possible hypothesis, whether we consider the action of the fluoric acid upon metals and alkalies, or whether we consider the action of the metal potassium upon all the other acids; from hence, therefore, we conclude it to be probable, that the fluoric acid is itself decomposed. It should in consequence form, in this decomposition, a combination of the radical fluoric acid with the potash and silex. It appears, that when this radical is only combined with potash, it can decompose water like the phosphorets; but when it is combined with potash and silex, it is not at all decomposed; doubtless, in consequence of its being a tripple salt, in such state of combination as to be insoluble.

However this may be, it is extremely easy to insure the combustion of the metal of potash with the fluoric acid gas.

The

The combustion being completed, and the vessel cooled, we withdraw, and detach the matter with a small spatula. This being effected, we can burn another quantity of the metal in this small capsule and glass, provided we cause to pass into it, the quantity of fluoric acid which had been absorbed in the preceding operation of combustion. We may in like manner make a third and fourth combustion; nothing prevents us, as we can always refill the glass to the same altitude with the fluoric acid gas, and can readily, at our pleasure, obtain the metal, by strictly attending to the process which we have laid down. We should however, add, with respect to this kind of experiment, to succeed compleatly, it is proper to absorb the unctuous matter floating on the surface of the metal by blotting paper, otherwise, it will spontaneously decompose, and yield a small proportion of hydrogen and carbon. In truth, it is with difficulty we can avoid this inconvenience; and whatever pains are taken, we shall always find a small portion of oil interposed between the metallic molecules, but its quantity is so small that it may be overlooked, and still no error be observable in the results. It is upon this oil that the property of the metals of potash and soda depend, of rendering lime water turbid.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

MR. WARDROP, in his excellent work on Fungus Hæmatodes, having observed, that the disease so named, "will probably be seldom met with in the ovarium," I am induced to send you for insertion in the Medical Journal, an account of a dissection, which may perhaps be thought a case of that sort. I have added another account of the appearances on dissection of diseased uterus, which, if you think sufficiently interesting, I will beg you to insert also.

Miss W———, æt. 47, had symptoms of diseased uterus for three years.

On opening the abdomen, the diseased mass was found to occupy almost the whole cavity. The liver and stomach were pressed up against the diaphragm, and the former much lessened in bulk; the uterus was considerably enlarg-

 ed,

ed, and on its upper surface, two tumours were seen connected with the peritoneal coat, by a small peduncle; one the size of a large orange flattened, the other of an oblong form and smaller; when cut into, they appeared to consist of a very firm whitish substance. The ovaria were each about the size of a child's head, and converted into an uniform brown pulpy matter, with cells, containing a dark coloured fluid; a few hydatids were on its external surface. The coats of the uterus were much thickened, but not at all in a schirrous state. The cavity was filled with carnous layers and loose pieces of coagulable lymph, in a very putrid state, but no ulceration whatever; the pressure of the mass had produced a contraction of the rectum.

Mrs. B——, æt. 36, the wife of a surgeon in the neighbourhood, after suffering from symptoms of diseased uterus about three years, was seized with excruciating pains over the whole abdomen, which continued till her death, about fourteen hours after this attack.

Dissection.—On opening the abdomen, the peritoneum was found in the highest state of inflammation. The omentum adhered on the left side. In the cavity was found about a pint of serous fluid, and about eight ounces of very fœtid pus. The uterus was enlarged, but not very considerably; and at its fundus, an ulcer about the size of a shilling had opened with the abdomen. The coats of the uterus were much thickened, but there was no scirrosity. The internal surface of the ulcer was about the size of a crown piece; there was no ulceration at the cervix, as described by Dr. Adams, as the usual seat of malignant ulcer of the uterus; of which this was a decided case.

I am, &c.

W. C. HEYWOOD, M. D.

Blandford, March 7, 1810.

Observations on the Lymphatic Distension of the Lower Extremities of Women, while in the Puerperal State. By Dr. Wyer.

[Communicated to the Massachusetts Medical Society.]

WRITERS on this disease have imputed it to a variety of causes, some to taking cold, others to a rheumatic affection, and others have had recourse to a dropsical disposition, to help them out in their attempts to account for it;

Mauriceau

Mauriceau has charged it to a reflux of the lochia upon the part, and not a few authors have deemed it to be a metastasis lactea. In the cases I have met with, there has been no reason to suspect either of the above causes, the lochial discharge and lacteal secretions particularly, having in all been so perfectly in their natural state, both at the attack, and under the complaint, that I could not think there was a shadow of reason to support an opinion, that either of these had the smallest influence in producing the disease. When I inform you I have had five cases of this disorder under my care, one of them an amiable wife, whose sufferings were both lengthy and severe; and that to the whole of them I was very attentive, though I fear but of little use; and if at the same time you will please to recollect in how unsatisfactory a manner it has been hitherto described, how few have accounted for it rationally, or pointed out such methods of relief, as the anxiety and distress it generally occasions, ever lead the Faculty to wish to bestow; and that hitherto, speedy relief has seldom been obtained; these considerations, I doubt not, will so far interest your well known candour in my behalf, as, at least, to secure me from censure in having presumed to touch upon a disorder confessedly involved in obscurity, and on which, I fear, I have not been able to throw much additional light; but as the profession may be benefited in some degree by knowing what has been found useless, as well as what is useful, in particular diseases, I thought the following remarks might not be wholly without their use.

There is much reason to suppose the sex must have been occasionally subject to this disease in all ages, and in every climate; but I have concluded that it is not a very frequent complaint, from having met with only five cases in nine hundred and eighty-nine women I delivered while in business, in which was included every variety of circumstance, which I can any way conceive connected with the obstetric art. The first four cases happened at different seasons of the year, and to women whose circumstances agreed but in few particulars; they had all borne children before, one two, two of them three, and the fourth four children; one was 24, another 26, a third 27, and the fourth 36 years of age; in this lying in, which was followed with the disorder I mean to describe, the labour had been natural, and tolerable easy; in all of them the placenta was delivered within half an hour after the child; neither of them lost much blood, had bad after pains, or

other unpleasant symptoms. The disorder made its appearance between the second and third week after delivery, at a time when they thought themselves nearly well enough to go abroad, and at a time when they had not been exposed to any error or accident whatever. They were women who had enjoyed good health previous to delivery, and were free from any constitutional complaint; they all suckled their children, had plenty of milk, and their children were very promising. Two of them complained on the fifteenth, one on the sixteenth, and the other on the nineteenth day, after getting to bed. Stiffness and pain in the upper part of the thigh, accompanied with a sense of lassitude and heaviness, pain in the back, groin, and labium pudendi, and thence downwards through the thigh, leg and foot, were the first symptoms; swelling soon followed in each of them; and in the course of two or three days the whole left limb was greatly enlarged, hard, exquisitely tender, and immoveable; a considerable degree of fever, with thirst, restlesness, and loss of appetite, attended. The pain abated in some degree in the course of the first week, but the swelling and lameness continued for near three months. The pain and swelling abated first in the upper part of the thigh where it began, and finally went off in nearly the same direction in which it had come on. They all finally recovered, and have never since had the least return of their disorder, though three of them have had children since. In these cases, which were very tedious to all concerned, I tried all the various topical applications, (blisters excepted) which I then thought could have the least tendency to relieve. Internally I used nitre, antimonials, mercurials, and bark, as symptoms appeared to require; but from the most careful attention to the effects produced by both the internal and external remedies, I am not able to say that I think any thing I did was of much service. Opiates for a time would abate the pain and procure rest; the faltering state of the powers of nature induced me to use the bark with all the patients, and I really thought the irregular remitting fever, which attended the oldest, was abated, her strength supported, and appetite mended by this medicine; but the disease in the limb was proof against both bark and opium. When they began to recover, I was as much at a loss for a cause of the change, as when they were taken down; and I believe the discovery of the one will be the best guide to the other.

In my fifth case, in which I felt myself tenderly interested

terested both as physician and friend, the labour was in the middle of a very cold winter; it was of the natural kind, but very severe; the delivery of the placenta was attended with much pain and great flooding, the after pains were very violent, and were followed at the end of the second day with the most painful hæmorrhoids I had ever known. These however, by anodyne and emollient applications, were but of short continuance; from their abatement to the end of the eighth day, nothing further occurred worth mentioning; at this time, my patient appeared in a fair way to do well, her appetite was good, bowels regular, she rested well, had plenty of milk, and was daily gaining strength; appearances however, soon began to change; she first complained towards night on the tenth day from delivery, of a sudden sense of weariness, while sitting in an easy chair, accompanied with a sensation in perinæo extending to the middle of the glutæi muscles, like what might have been expected from sitting upon a hard unyielding seat; her pulse soon quickened, and she became very thirsty, with a bad taste in the mouth; she lay down expecting relief from changing her posture; but in this she was disappointed; the pains increased very rapidly, and every posture was alike distressing. In eight hours from the attack, the pain had extended up the inside of the pubis, and thence to the inguinal glands, which soon became greatly tumefied, and so very painful and tender, as to be incapable of bearing the lightest pressure of the bed-clothes; from these glands the pain in twenty-four hours extended down through the thigh in the course of the principal lymphatics to the knee; from the knee, it still was confined to the lymphatics, and through them passed so rapidly to the toes, as to have disabled the whole limb in thirty-six hours. In this stage of the disorder, which I think might without great impropriety be denominated the inflammatory, the pulse was seldom below a hundred and twenty, and very hard; the whole surface of the body was hot and dry; the heat of the limb was particularly increased, but the colour was as yet unchanged; frequent discharges from the bowels now took place, and a few hours after a constant vomiting of dark coloured bile. By the use of acescent drinks and an anti-emetic mixture of succus limonum, sal absynthii, and aquæ menthæ, the stomach and bowels were quieted; and by plentiful dilution afterwards, accompanied with nitre and antimonials, the skin was opened, and a plentiful perspiration following, the heat and fever abated.

 I again

I again examined the limb very carefully, and found neither change of colour nor increased size, but from the hip to the toes such tenderness and stiffness as rendered it wholly useless; in two days more the pain began to abate, but in its place an enlargement at the upper part of the thigh was perceivable; the swelling extended downwards by degrees till the third day from its beginning, at which time the whole thigh, leg and foot were distended in every part to three times their natural size; the limb had a tense smooth feel, did not retain the impression of the finger, was a little hotter than the other, but had the most remarkable glossy whiteness I had ever before seen in any subject. On the side of the tibialis anticus muscle, I could discover a slight blush of red, as if a straw dipped in raspberry juice had been drawn from the knee to the top of the foot; this stripe was very painful to the touch, particularly just below the middle of the muscle, where is seated a large lymphatic gland. I endeavoured to contrive an easy posture for the limb, but in this, and my expectations that keeping it parallel to the horizon would diminish the swelling, I was equally disappointed. From the size and stiffness of the limb, and weakness of the whole body induced by the preceding fever, pain, and evacuations, she was unable to sit up, or to afford herself the least assistance in bed. The vomiting returned again; and from the taste in the mouth, the colour and quantity of what was brought up, I was convinced the biliary secretion was greatly increased; the pulse again quickened, but had lost its hardness; the skin was soft and moist; her spirits were much depressed, and every power of Nature seemed to faulter; no kind of nourishment could be taken, for every thing offered, either as food or medicine, excited nausea, such things excepted as were of the ascescent kind; oranges, lemons, and cyder, alone were grateful, and I allowed them freely; at the end of two days from the last attack of vomiting, the stomach became quiet, and could bear a little sago with orange juice, and her mind was somewhat more reconciled to her fatiguing lameness; the limb still, however, retained its size and immobility.

Matters continued in this state for thirty-four days with no change of sufficient importance to deserve attention. I now found the swelling beginning to subside at the upper part of the thigh, in the inguinal glands, and by degrees downwards to the foot. That its decline was very slow may be concluded from its having scarcely fallen to its

its natural size in three months; when the swelling was pretty well reduced, excepting in the foot, which continued much as it had been. At last it began to yield, and in ninety-seven days from the attack, motion was so far restored to the knee and ancle as to enable her to raise the limb and to place it in different postures, without assistance, but as yet it could not support the weight of the body; by degrees strength was so far restored as to enable her to hobble about the chamber, and in twelve days more she could walk in the street. Being desirous of enjoying a share of the exercise she long wanted, she was induced to walk about a quarter of a mile; upon the approach of evening she perceived the ancle beginning to swell again, the tenderness and red stripe upon the anterior surface of the leg began to appear, and great were her apprehensions of a return of the disease; but by the immediate application of a blister to the most inflamed part, it got better in a few days; and excepting some little uneasiness upon using much exercise, with a little swelling upon keeping the limb long in one posture, it appeared to be restored to its natural and healthy state.

I shall now give in one point of view, such particulars of my treatment of this tedious disorder, as appear most worthy of notice.

In the first stage of the disease the very great quantities of bile thrown upon the first passages, occasioning violent vomiting and purging, evidently required the first attention. Frequent draughts of chamomile tea to wash the stomach were first administered; and afterward an anti-emetic mixture of succus limonum, sal absinthii, L. L. and aquæ menthæ abated these symptoms. Antimonial and nitrous medicines with dilution brought on perspiration, and abated the heat and great iuquietude which had occurred in the first stage of the complaint. Emolient fomentations, gentle frictions, discutient liniments, saturnine washes, lubricating ointments, were all successively and frequently used to the limb during the continuance of the swelling, but I am ready to acknowledge, that neither of them appeared to be of the least service: the disease appeared determined, [as the nurse expressed it] to have its course, in opposition to the many exertions I daily made to give relief. The violence of the pain at times demanded anodynes; by their use, I was always able to give a night's rest, without any bad consequences on the following day. As cider agreed better with the stomach than any drink I proposed, I allowed it freely; it never gave the

the least uneasiness, and very evidently prevented the trouble which was constantly threatened from very large quantities of bile thrown upon the stomach. Her diet consisted of sago, gruel, and ocasionally a little light meat, with broths, &c. Clysters were frequently injected, for the double purpose of keeping the bowels open, and to serve as a fomentation for an enlargement, hardness, and tenderness felt in the vagina, which I doubt not was an over-distended lymphatic gland. As the swelling of the limb subsided, I caused cloths wet with a cold solution of sacch. saturni to be frequently applied, with a view to restore the tone of the lately overdistended fibres; and as often as the stomach would bear it, I gave the bark with elix. vitriol. allowing her to drink freely of warter highly impregnated with fixed air. Increasing appetite, less bile, and more strength, were very evidently the effects of this plan.

For the swelling and return of inflammation in the lymphatic of the leg which were brought on by walking abroad, I applied a blister upon the most inflamed part, being now convinced of the want of efficacy of all remedies hitherto employed. The relief was so sudden and lasting, that I was much inclined to think that had blisters been applied earlier in the disease to different parts of the limb, much suffering would have been prevented, and the cure much sooner completed; the evidence in favour of this opinion appeared to me so strong, that I made up my mind to try it, should I ever again be consulted in a similar case; and I would beg leave to submit it to your judgment, whether it might not be advisable to give this aplication a fair trial, in a disease, acknowledged by all who have seen it, both tedious and vexatious, and which has not as yet yielded, in a short time, to any mode of treatment which has been adopted, and for which, it is generally thought, we are not yet in the possession of an adequate remedy. Perhaps the *blister* may in future be found to be the desideratum we have long wanted.

Many reasons might be adduced in favour of this practice, but as my sole motive in writing this paper, was to lay before the Society a few plan facts, I shall leave reasoning upon them, to those who are better qualified to discuss this subject.

But that this disease depends upon an accumulation of lymph in the limb, and that this accumulation is dependent on causes peculiarly connected with the puerperal state, I think may be proved by the most incontestable arguments,

arguments, and will, I doubt not, readily occur to every member of this Society, who will give himself the trouble to reflect on the symptoms, the rise, progress, and termination of this very tedious disease.

I can but lament that it has been so little in my power to throw more light on the curative indications and the best method of answering them, than I have done.

If any thing I have said, should be found to have placed the disease in the least useful point of view, to excite the attention of more judicious practitioners to endeavour to investigate its cause, nature and cure, or to support the spirits of those who are either subjects or spectators of it, it will afford me great pleasure. Some consolation arises from the considerations that this disease has seldom been known to prove fatal; and that although as yet, it cannot be immediately relieved by art, nature generally struggles through the trying conflict, and has so far as either my reading or observation has extended, generally come off completely victorious.

Experiments upon the Effects of high Degrees of Heat upon the Animal Economy. By F. E. Delaroche.

(Journal de Physique, tom. 63—1809.)

PHYSIOLOGISTS have been much engaged with a consideration of the high degrees of heat capable of being supported by man as well as what it produces upon animals. The very interesting experiments of Drs. Fordyce and Blagden leave us on this subject but little to desire. I have thought it right, however, to repeat some of these experiments, with a view to ascertain whether other individuals could support this degree of temperature equally as these naturalists. With this intention, M. Berger and myself were exposed in a stove of different degrees of heat, our bodies being naked and guarded from the heat of the furnace by a screen of silk. We calculated the temperature of the place, by means of a thermometer attached to the wall, 4½ feet from the ceiling.

Temperature of stove at beginning of the experiment,	70°
At the conclusion	72
I entered the stove at	5h 17′
Weight of my body at the time of entering	128℔. 11oz. 3gr.
10′ after coming out	128℔. 5oz. 0gr.

I perceived

I perceived very sensibly on entering, the impression of the warm air, but without being incommoded in the first moments. At 3h 21′, some small drops of sweat appeared upon my brow. At 3h 22′, the whole of my body was enveloped in an abundant perspiration. I began to experience at this time a slight weakness, and some distress during respiration, which continued to increase. I was obliged to withdraw.

Experiment II.

Temperature at the beginning of the experiment .	72°
At the conclusion	70
M. Berger entered at	3h 41′
He quitted it at	3 54
Weight of his body at the commencement .	51,460 grs.
At the conclusion, and after being 5′ out .	51,145 grs.

He experienced, on entering, a slight degree of burning about the nostrils and nipples. The sweat which began to appear upon his forehead, at 3h 45′, flowed two minutes afterwards, in abundance, from every part of the body. At the moment of his quitting the stove, he experienced a slight degree of weakness, and even a tendency to fall down. His pulse an instant before, beat 128 times in a minute.

Experiment III.

Temperature of the stove at the beginning of the experiment		87½°
At the end		86
M. Berger entered the stove at		4h 32′
And departed at		39
Weight on his entering .	50890 grs.	103lb. 15oz. 3grs.
Two minutes afterwards .	50670 grs.	103lb. 8oz. 1½ grs.

He experienced a very considerable burning sensation about his nipples, at his nostrils; and even over the whole of his face. His body was suffused by perspiration at 4h 36′ in great abundance. When he came out, he was weak, and much indisposed. A moment before, he could not count the frequency of his pulse. Three quarters of an hour after he came out, he was restored to his natural state.

These experiments perfectly well accord with those which are recorded by Dr. Blagden, inasmuch as that man can for a short time maintain a degree of temperature very considerably above the ordinary temperature of the medi-

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um in which he lives; but they also prove that there is a great difference between different individuals, relatively to the extent of this faculty. In all of these experiments, M. Berger supported the experiments much better than myself, as may be perceived by a comparison of the experiments. If on the other hand, these be compared with the experiments of the English physicians, we shall perceive that these gentlemen, or at least *Dr. Blagden,* suffered much less than *M. Berger* and myself. In fact, Dr. Blagden did in one experiment, bear for eight minutes, a temperature which was between 240° and 250° Fahrenheit, ($92\frac{4}{4}$ and $102\frac{1}{3}$° Reaumur,) and was not afterwards at all the worse for it; and that M. Berger was scarcely in the stove the space of seven minutes, at the temperature of 87° Reaumur. On another trial, Dr. Blagden supported a degree of heat during 12′ of 222° Fahrenreit, ($83\frac{1}{3}$ Reaumur,) without experiencing any inconvenience beyond fatigue.

The author has made a great number of experiments upon the degrees of heat which animals and man can support in warm baths and in vapour baths; on the effect which is exercised by heat upon respiration; upon the relation which exists between evaporation and the matter of transpiration, and the faculty possessed by animals of producing cold; on the influence which heat exerts upon respiration; and upon the state of the body in animals which have died in consequence of excess of heat.

He concludes his researches by the following observations.

Such are the researches which I have made to ascertain the effects which are produced by a high degree of heat upon man and animals. I could wish to give them more publicity, and to render them more complete, but the time which this labour would cost, and the difficulty of the subject itself, have not permitted me to accomplish this. Although I cannot deduce general consequences, I proceed, notwithstanding, to recapitulate, in a few words, the results which they have furnished to me.

1. Their first experiments have in view to determine what is the degree of heat necessary, to cause animals to perish. They have shewn me that exposure to a temperature of 50°, and even of 45° Reaumur, were sufficient to cause death in animals of small size. It is even probable, that a less intense heat, but the action of which is longer continued, may produce this effect.

2. M. *Berger* and myself, have stated by experiments, made

made upon ourselves, the power man possesses of supporting, though, in truth, but for a very short space of time, exposure to high temperatures. The comparison of these experiments, whether with each other, or with those of Dr. Blagden, has demonstrated that there may be a great difference between different individuals relatively to the extent of this faculty.

3. Those experiments wherein we were exposed to the action of aqueous vapours, have proved to us the truth of the assertion of Dr. *Fordyce*, viz. that the impression of an air charged with vapours, is at an equal degree of temperature, much more intolerable than dry air.

4. We have been anxious precisely to estimate, by the help of the balance, the effects of heat upon the transpiration. The loss of weight which we experience by this means, appears to be in a direct proportion of the elevation of temperature to which we have been exposed. We have also ascertained that the heat of the aqueous vapour, excited exudation with much more energy than a dry heat.

5. I believe that I have demonstrated that the faculty, enjoyed by man and animals, of maintaining an equable temperature, although exposed to a high degree of heat, is much less extensive than is generally believed, according to the experiments of M. M. *Blagden* and *Fordyce*; and that it is in no wise comparable to the faculty, which they have of resisting cold, in maintaining a temperature above that of the ambient medium.

6. Although this faculty should be restrained, it would nevertheless exist. It is then interesting to ascertain the cause. Does it merely render in the refrigeration, produced by evaporation, as some physiologists think? I am not in a condition to answer whether the same thing takes place with respect to cold blooded animals. I can merely state, that inanimate bodies, the inner surface of which is moist and susceptible of evaporation, would acquire a less elevated temperature, when exposed to a high degree of heat, than cold blooded animals placed under the same circumstances.

7. I have also endeavoured to determine what is the influence of heat upon the phænomena of respiration. Dr. *Crawford*, who occupied himself much upon this subject, believed that the deterioration of the air, by the respiration of animals, was by so much the less as the heat to which they were exposed was greater. In sufficiently numerous experiments, made by myself, I have not perceived

any

any fixed proportion between the degree of deterioration in which animals have been confined, and that of the temperature to which they have been exposed.

8. I, lastly, examined the circumstances which accompanied death, occasioned by exposure to heat; for I in particular, examined the state of the body of animals who died in this manner. The phænomena which anatomical inspection has presented, among which, the most remarkable, is the dim motion of muscular irritability, have not been sufficiently constant to permit me to draw any conclusion as to the cause of this death.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

THE more frequent opportunities I have of witnessing the diseases of the generative system, the more I am inclined to believe that it may be difficult to specify the extent of their ravages on any individual or class of organs belonging to the human body. The following case is not the only one, in both sexes, which I could adduce in proof of their widely devastating effects.

An unmarried gentleman, aged 30, was addicted to private indiscretion at a very early period, but being ignorant of the bad consequences of such practices, he continued this habit to excess for a considerable length of time. The first bad effects of these practices, which he did not then attribute to that cause, was frequent giddiness, attended with a sensation as if the earth, as he expressed himself, was sinking under him. Still, however, he did not refrain from his bad habits, and of course these symptoms gained ground. To these symptoms were added others; he became perpetually apprehensive and alarmed, he knew not for what, on the most trifling occasions; was almost constantly troubled with violent palpitation of his heart, with stinging or shooting pains across his chest; and on such occasions he experienced flushing of the face, and a most disagreeable heat all over his body, particularly in the palms of his hands and soles of his feet. His testes were lower than usual, particularly the left, and the spermatic chord was somewhat enlarged and very painful.

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His mind now seemed to partake of the general disorder; he became aukward and stupid to a great degree; all his mental faculties suffered considerably, especially his memory, which, unless on some particular subjects, and those of the very simplest nature, almost entirely left him. He laboured under a continual fright, that at some period at no great distance, he would altogether lose his reason. What rendered his situation particularly distressing was, his being perfectly sensible of all his distresses, and of his mental deprivations as now related. He at length became alarmed for his safety, and was in continual fear that he would expire suddenly while in bed. It was not till this period, which was his 22d year, that he was resolved to lay aside all these bad practices, which he now concluded must have given origin to his present state. Soon after this, he first had connection with a female. He was now sensible of a great improvement in his health, the palpitation of his heart ceased, and he became somewhat cheerful in company; but still his mind was weak, unsettled, and so easily agitated, that it alone threw a damp on all the pleasures of life.

From his 22d till he arrived at his 26th year, he occasionnally used cold bathing, which he thought yielded him momentary relief, but produced no permanent good effect on his health. He at length, however, found that he had no inclination for sexual intercourse, nor were his powers in that way so vigorous as they had been for some time before. He now tried the effect of nourishing diet, and regularly used mineral waters for two seasons, which he thought of advantage to him.

About his 29th year he was greatly improved in his general health; his mind was at times cheerful, and even happy, more so than it had been from the age of fourteen or fifteen. In short, in respect to his feelings, he was quite a new creature.

One morning, about this period, while in bed, he had recourse, the first time for five or six years, to his old habit. He was immediately seized with a degree of stupidity and a kind of derangement, different and more distressing than he had ever before felt; a profuse sweat too instantly covered his whole body, so as to render his linnen quite wet. He declared he never was in such a state of complete misery, and he earnestly wished that every moment might terminate his existence. He suffered a sort of delirium, yet was sensible of his state; he leaped out of bed and bathed his face in cold water, but this only seemed

seemed if possible to increase his sufferings; he put on his clothes and stalked about the house like a person in despair; he drank several glasses of wine, then of ardent spirits, but they had no effect upon him. After this he went back to bed to endeavour to procure some sleep, and the spirits he had used assisting him, he slept about two hours. He was now somewhat refreshed, but still his mind was very much and strongly confused; he felt as if afraid of entirely losing his reasoning faculties: indeed, he assured me, that language could not convey his feelings at that time, and for nearly two years after, when he applied to me.

It is strange that this patient scarcely had an emission oftener than once in eight, ten, and sometimes fourteen days; yet it is evident that the effects produced on his general health, arose from the generative organs caused by the same means, which had in all my patients occasioned seminal evacuations.

Previous to his application to me, he had used bark and wine, and carbonate of iron, which had considerably improved his digestive organs, and even his general health, but still he was stupid, and, as he expressed himself, strange even to himself.

As there seemed to be no symptom or affection of any organ to contraindicate the administration of the cantharides, I did not hesitate to prescribe that medicine to this patient, according to the method formerly adverted to; at the same time, I recommended the use of the cold bath.

He took the medicine eight months and two weeks, before he received any thing more than temporary relief from it. He had frequently, for a day or two, experienced greater comfort than before its administration, but he uniformly relapsed into his old state. At the end, however, of the above period, he felt sensibly invigorated, his mind was more cheerful, and his testes werenot nearly so relaxed as formerly. He, however, continued the use of the medicine about seven months more, and he is now perfectly recovered. His mind is still occasionally gloomy, but that is of short duration, and, upon the whole, he enjoys his life with considerable comfort.

Princes Street.

On the USE of STANNUM.

By Dr. Shearman.

It has been the lot of almost every substance employed as a remedy in the practice of medicine, to have its virtues at one time highly extolled, and to be very much over-rated, while, at another time, the same substance is depreciated in the public estimation as much below its real utility, and not unfrequently falls entirely into disuse, and is altogether neglected. Hence many articles of the Materia Medica are never, or very rarely employed, because they have not answered the extravagant encomiums bestowed upon them, by those who first discovered or introduced them, and a conclusion is too hastily drawn, that since they cannot effect every thing that has been boasted concerning them, they are unworthy to be retained in practice for the purposes they are capable of answering.

Stannum, in common with other substances, has undergone somewhat of a revolution of this kind; at no time, however, have its virtues been so extravagantly magnified, as we find to be the case with many others, while yet several beneficial effects have been formerly attributed to the employment of it in diseases, which at the present time, are altogether denied to it. There requires no further proof of this, than the variety of preparations of this metal, contained in the older Pharmacopœias, and the virtues attributed to each of them by the compilers of that day, contrasted with the slighting treatment it has met with in the two last Pharmacopœias of the British Colleges.

Without attempting to justify in the least, the high estimation in which it was formerly held, I cannot help thinking, but that the Edinburgh College, in giving no directions for preparing the powder, and the London College, by restricting the employment of it to its metallic filings, have not justly appreciated its effects upon the animal œconomy, and have deprived us of an useful remedy in some cases of diseases, which reluctantly yield to any medicines whatever, and which may sometimes be overcome by this metal, when none others are of any avail. That it is occasionally useful as an anthelmintic, every one seems willing to allow, and both Colleges appear to have proceeded upon the ground of its being useful

ful for nothing else; both seem to have taken up the idea, that its action as an anthelmintic being purely mechanical, the form in which they have directed it, is the one best calculated to produce the effect expected from its employment in that view. That this accords with the general opinion of Physicians, I am led to believe, from the statement given by the learned Editor of the Edinburgh New Dispensatory, who, under the article Stannum, informs us, " that it is now only used as an anthelmintic, especially in cases of tænia," adding from himself, that " probably it acts mechanically."

A long use of this metal, however, has impressed me with an opinion, that its utility in cases of disease, is not confined to its mechanical action upon the intestines; since I have frequently found it serviceable in several cases of what are usually called *nervous affections*, more especially in head-achs that have been so denominated; many of which have yielded to it, when other remedies have failed, though its success has been somewhat uncertain, and at times has required a long perseverance in its exhibition to insure it, owing probably to its most effective preparation not having been always employed.

I well know that many affections of the head are symptomatic of irregular action in the alimentary canal, and are produced by diseases situated there; and our nosologists have not been sparing in arranging many convulsive diseases as being symptomatic of worms in the intestines, which would afford a presumption, that all the good effects experienced from the use of Stannum in such affections, may be attributed to its anthelmintic properties; but I suspect some fallacy in the opinion of worms being frequently a cause of these affections, they are themselves most commonly a symptom only of the unhealthy state of the alvine canal, and when this is corrected, the worms of course cease to exist, there being no longer a proper nidus for them. The good effects of this remedy, whatever they may be, are not increased by that state of the metal in which its mechanical powers are the greatest, but directly the contrary; and accordingly, I have always employed the metal in the finest state of powder in which I could procure it: this has generally been obtained by the process directed in the London Pharmacopœia of 1787, a very fine sieve being employed for the separation of the powder, which, even in this state, retains somewhat of a metallic appearance,

Two Cases have lately come under my observation, in

which the use of tin has been followed by the most beneficial consequences, and which I could not fail to attribute to the minute degree of division the metal had undergone. I shall briefly relate them, as they appear recorded in my notes taken during the time the patients were under my care, at the Dispensary, in Old Gravel-lane.

Aaron Brown, aged 11 years, about five weeks before I saw him, had been attacked with head-ache and a considerable pain in his loins, loss of appetite and costiveness; three weeks after that, was seized with epileptic fits, recurring several times daily; they were always preceded by pain in his back, which seemed to extend up to his head; the integuments of the loins were tender to the touch, and there appeared a slight degree of swelling; he had not received any injury. I gave him 6 grains of calomel at night and a cathartic in the morning, and these were repeated at the interval of two days; they produced copious, slimy, and fœtid evacuations. The appetite now became keen; none of the other symptoms were relieved. A blister was applied to the loins, and a grain of calomel exhibited night and morning. The calomel was continued a fortnight, with cathartics occasionally interposed, within which time another blister was applied. No alteration in the symptoms, and the fits were as numerous and violent as ever.

Nov. 13. Stanni præparati ʒi. nocte et mane.

17. Symptoms all the same; bowels regular. Cont. stannum. empl. lyttæ ad lumbos.

20. Blister had risen well; he had several fits in the night of the 17th, and morning of the 18th, but has had none since. Upon being told the powders given him on the 17th were different from his former ones, I examined them; they had nothing of the dark metallic colour of the stannum, but consisted of a fine impalpable powder, nearly of the colour of fresh powdered ipecacuanha. Upon inquiry, I found, that he had been supplied from a fresh parcel of tin, sent in by a different druggist; and from him I learnt, that it had been prepared by subjecting the powdered tin, separated by a fine sieve, to levigation and elutriation,* in the manner directed by the Pharmacopœia for the preparation of chalk.

27. Had

* Does not this operation produce some considerable oxydation of the metal?

27. Had experienced no return of his fits. Dismissed cured.

The sudden amendment of this boy, immediately upon the exhibition of the new parcel of tin, struck me, as being curious, and I wished to ascertain what share the medicine had in producing this change. Happening to have under my care, at this very time, in the Dispensary, a favourable subject, I again exhibited it.

John Smith, aged 5 years, of dull faculties and fatuitous appearance, about nine weeks ago fell down upon the ground, since which time he has daily had several fits, of an epileptic form; previous to the fits, he complains of a pain in the abdomen, which feels rather tense and hard; they are succeeded by a stupor and profuse sweating; he sleeps well at night. The appetite was at first voracious, is now more moderate. He came under my care about three weeks ago, during which time, he has been taking calomel and cathartic medicines without much apparent benefit.

Monday, Nov. 27. Stanni præparati ℈ij. nocte & mane.

Friday, Dec. 1. Owing to some mistake of the person who fetched the medicine, he had taken only one dose, which was on Monday night; no return of the fits on Tuesday; two slight ones on Wednesday, but not any since. Repetatur Stannum.

This boy, who had all along been very punctual in his attendance, never once having missed, and whose mother was so very anxious for his recovery, as hitherto, implicitly to have obeyed all directions, came no more to the Dispensary, by which I am led to believe he had no further return of his fits, and neglected to come for a letter of thanks, a practice too common among dispensary patients when they no longer need assistance.

I too well know the fallacy of medical experience, to ground any conclusions upon these two cases, one of them rather imperfect indeed; but I think the coincidence sufficiently striking to merit further attention. In Brown's case, the fits returned no more after two doses of *fine tin* had been taken, though the former ones of coarsely powdered tin had produced no effect upon the disease. Smith, after a single dose, passed the whole of the next day without a fit, and the second day after that without any, although he had never missed them before. In neither of the cases were any worms voided; and in Brown, the discharge of fœtid slimy mucus did not prevent the accession of the fits. I shall not omit any future opportunity of giving this medicine; but the only way duly to appreciate the value

value of any remedy is, to make a great many trials by several different practitioners; and those who can readily believe that the same substance, under different states of preparation, may produce very various effects upon the animal system, will perhaps be induced to subject this question to the test of their experience.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

COLLECTIONS of insulated facts may in time form the basis of general rules, or prove the key for the discovery of general laws in Nature. Periodical works like yours, therefore, where every fact may be speedily recorded, become their proper repositories. The number of individuals who are willing to undergo the labour of composing long dissertations, or entering into deep reflections, on professional subjects, is comparatively few. Scarcely an individual, however, engaged in practical medicine, but will have it in his power on various occasions, with little trouble, to add some facts to the accumulating store. He has only carefully to observe, and note down what is unusual, or new to him, as it recurs, to be transmitted to your Journal, or some other of the same sort, as early as convenient.

A fact in your Journal for June last, and another in the one last published, on the pernicious Effects of Ipecacuanha to certain individuals, induced me to send you a similar communication.

Mr Spencer, indeed, on whose apprentice this drug exerted its anomalous effects, invites the profession to communicate such similar instances as have come to their knowledge. His communication appears to be the first, and the subject has lain dormant till Mr. B. in your last Journal, has added a second, as occurring in his own person; and you, Sir, mention a third in the person of your own father.

To these three cases in the male subject, I shall now add two in the female, who seem to have been affected in so similar a manner by the subtle effluvia of ipecacuanha, that to enumerate their symptoms would be only to repeat what

what has already been given, respecting those effects above mentioned.

The first of these cases is that of a lady, now about 50, the wife of a surgeon, and mother of a numerous family. The general state of health has always been good, her disposition lively and active, and by no means possessing any thing of that valetudinarian irritability which marks striking peculiarity of constitution. She has been much in the habit, when the hurry of business required it, of assisting her husband in dispensing medicines. This gave rise to her first discovery of the effects of ipecacuanha on her habit.

I had an opportunity of remarking this fact about eighteen months ago, being on a professional visit at her house, while her husband laboured under a severe fever.

She was about to dispense one of my prescriptions, in which some ipecacuanha had been ordered, and the moment she saw what the composition was, she ran from the shop to a distant part of the house, refusing to dispense it. This excited my curiosity to find the cause. On following her, she explained it, and with some degree of anxiety looked round, lest some of the doors between her and the shop should have been left open while the prescription was about to be dispensed.

As my stay was protracted some days, I had occasion to see these fears repeatedly excited. One forenoon in particular, while she was in her kitchen, a considerable distance from the shop, (two passage doors being open between herself and it) while she could neither see nor know before hand, that ipecacuanha, which was the case, was weighing, she called out with vehemence to have the doors closed, on account of the sensations she was then beginning to feel.

The second instance came to my knowledge only the day before yesterday. The lady who is the subject of it, calling on me on her mother's account, who was indisposed, and being shewn into my room, took up your last Journal, which lay on my table, to amuse herself till my appearance, as I was at that time engaged on some family affairs, which detained me a little. On my entering the room, she told me she had been reading my book, and the part which she accidently opened, was Mr. B's communication. She added with a smile, this is far from so uncommon a case as this gentleman seems to think, for I myself am affected by

 it

it in the same manner; and then went into a considerable detail of the symptoms it excited in her.

The catarrhal affection and sneezing she described as particularly distressing. The copious flow was so acrid, as to excoriate, in a few hours, the parts over which it fell. Her upper lip and the alæ of the nostrils were swelled. But what created in her the most alarm was its effects on her eyes. They became proportionably swelled, and stiff, and sight was diminished. The eye-lids tumefied, so that the eyes were sunk almost out of sight, which seemed to be the chief cause of the diminution of vision. The discharge from her eyes was nearly as great as that from her nose, and little less acrid. Thus was she tormented for that day, but found herself relieved next morning by a night's rest. The remaining effects, the itchings excepted, gradually disappeared, and in a day or two ceased altogether. She felt likewise a tightness in the chest, which greatly impeded respiration; but as she was occasionally affected with a temporary inconvenience of this kind, her sensations were only an augmentation of that symptom, and could not therefore be altogether attributed to the ipecacuanha, though this evidently brought on a severe recurrence. The lady is about 33, unmarried, and of a somewhat delicate and irritable habit, tending to valetudinarian. She discovered its effects on her in the following way. Her late father, a dissenting minister, got into the habit, for several years before his death, from benevolent principles, (whether erroneous or otherwise, is not the business of this place) of prescribing for the poor, and on the Buchan and Reece principle, kept a medicine chest in his house. Gratis practice has generally a numerous attendance, and his, if not altogether, was nearly gratis. This lady was in the habit of assisting him to dispense; and in this manner discovered the effects of this drug on herself. At first she attributed the symptoms to cold, not having any suspicion respecting the powder, but her reiterated feelings on every occasion of dispensing it, convinced her at last, that they must have arisen from its effluvia.

I am therefore of opinion with this lady; and from these five cases now before you, think that we only want observations and consequent communications to convince us that the pernicious effects of ipecacuanha, from its effluvia taken into the trachea and lungs, are far from unusual.

This lady, who possesses an excellent understanding, and a philosophical turn of thinking, put the thing in some measure to the test, by comparing it with the effluvia of

of another irritating substance well known to induce sneezing and a flow of mucous when applied to the Snide-irean membrane of those unaccustomed to its stimulus, as she was. Being soon after in company, where there were persons in the habit of taking snuff, she placed herself, as if by accident, between two of them, of her own sex. The good ladies had been long initiated in this filthy and often pernicious, though fashionable custom, and as they took it plentifully, dispersed its finer particles around, so that she inhaled an atmosphere thickly impregnated with it. No catarrhal effects were excited, and scarcely any sneezing, though it was otherwise disagreeable to her organs of smell.

Her conclusion was, that the effects she felt from the ipecacuanha, were in consequence of a peculiar quality inherent in it beyond a simple stimulus.

In my turn therefore, I now solicit your readers to communicate such instances of it as may have fallen under their observation.

I am, &c.

R. HAMILTON.

Ipswich, March 12, 1810.

To the Editors of the Medical and Physical Journal.

GENTLEMEN,

I Lament exceedingly that the mortality amongst those valuable aquatic animals (leeches) is become of so great a consequence from a want of knowledge in the preservation, and improper treatment after suction, that renders it almost impossible to procure them even at an enormous price; it is obvious to every medical practitioner, that the utility of them in local inflammations is not to be exceeded, and in some cases, when their applications are immediately necessary, it becomes of the utmost consequence if they are not instantly obtained. As there are many parts where inflammation frequently attacks, that cupping glasses cannot be applied with any degree of advantage, it becomes a matter of importance, to ascertain a way of preserving them after being satiated with blood, and of cultivating them, that they may be procured more reasonable, and with greater facility calculated for the benefit of mankind.

Mr. Peck I observed, in your last Journal, has given some

some instructions for the preservation of them, and treatment after suction, wherein he recommends keeping them in spring water. Is not spring water too cold and penetrating for this tender animal to exist in, as they are in general found in ditches and ponds, where the water is particularly soft? And when he comes to the mode of treatment after suction, he says, apply salt to the mouth of the leech, and it will disgorge part of the blood, and by a repetition it will entirely evacuate itself. I have frequently observed, that leeches by this mode of treatment, either will not evacuate themselves of the blood, or they are unable, and generally die. And he further mentions, to take particular care not to touch any other part of the leech with salt, except the mouth, or else it will produce blisters, and cause immediate death.

I believe there is no insensible membrane upon the mouth of the leech, I presume I may say granted; consequently, salt must have the same stimulating quality, and be productive of the same effects on the mouth as upon the body; and in my opinion, when blisters are excited upon the mouth, it becomes of more consequence than when on the body, as it renders the animal incapable of supporting life.

In a number of instances where I had occasion to apply them, the following mode of treatment has proved successful, and since I suggested this plan, I have not had a single leech die. Take a gentle hold of the leech and apply it to the part affected, and generally when she is full she will fall off of her own accord; then gently squeeze out the blood, (it will come out in a stream) then wash her clean in soft water, afterwards put her in a bottle, half filled with the same water; cover it with leather, and prick holes in it to admit air. When I have had a scarcity of them, I have frequently reapplied the same leeches in less than five minutes after the first operation, where necessity required, and they extracted as much blood the second time as on the first application, and without doing any injury to themselves, if judiciously managed.

As to Mr. P's other observations on this animal, as a barometer, they are very rational; but as experimental facts have convinced me that his plan is erroneous, that is, in the mode of treatment after suction, it induced me to take up my pen to communicate to your notice my observations and mode of treatment.

I am, &c.

Newmarket, February 9, 1810. E. L. KNOWLES.

On the vesicating Properties of the Potatoe Fly.
By Dr. John Gorham.

(Read before the Masachusetts' Society, February 3, 1808.)

IT is well known, that the only substance in common use among the physicians of this country, for the purpose of raising blisters on the skin is the cantharis, or meloe vesicatorius, a native of the countries bordering on the Mediterranean, and imported into the United States, often through the medium of Great Britain. The expence attendant on this mode of procuring it is undoubtedly great, and the possibility of obtaining, at all times, a constant supply, necessarily depends on the concurrence of numerous contingent circumstances, rarely within the control of the medical practitioner. Hence the physicians of America have acknowledged the importance of cultivating a more intimate acquaintance with those indigenous productions, which, from the activity of their preparations, and the easy modes of acquiring them for immediate use, are capable of being substituted for foreign medicines, and, consequently, of rendering them independent of those accidents and contingencies, whose occurrence, not many years since, was a source of embarrassment, and even of distress to the members of the medical profession on this side the atlantic. Among the small number of domestic medicines, whose active virtues have entitled them to a place in our materia medica, we may rank the Lytta Vittata, or potatoe fly, an insect, which, at certain seasons of the year, makes its appearance on the potatoe vine, and whose effects, when applied to the human system, are perfectly analogous to those of the Spanish cantharis.

The discovery of its peculiar properties was the result of accident, and it was first employed in the practice of medicine, by Dr. Isaac Chapman, of Bucks-county, Pennsylvania, whose conclusions, drawn from a partial investigation of the subject, may be found in a paper published in the 2nd volume of the New-York Medical Repository. In this, confining himself merely to a history of the effects, resulting from its external application, he is perfectly silent on its peculiar habits and modes of existence, and very limited in his description of its entomological characters. From this concise memoir we learn, that at the proper season of the year, it abounds in immense quantities on the potatoe plant, is easily procured and prepared for medicinal purposes, by the immersion of the vessel, in which

which it is confined, in hot water, and its subsequent drying by exposure to heat; that the powder of this fly, when applied to the cuticle, produces irritation and the subsequent effusion of a serous fluid between that and the cutis vera, and, that in some cases slight strangury has supervened, in consequence of its partial absorption. The effects, resulting from its internal exhibition, have never been demonstrated by experiment; and he infers, only from analogy, that they are the same as follow the use of the cantharides. But though the properties of this valuable insect were thus made public, and its importance in our materia medica much enhanced by the facility with which it may be procured, it is probable that the demonstration of its activity was confined within the narrow sphere of Dr. Chapman's operations, since had it been introduced into general practice, and made an article of extensive commerce, its reputation, in the course of ten years, would, doubtless, have reached the physicians of this part of the country. Notwithstanding, however, that its existence and powerful effects have been known, for some time, to one or two medical practitioners in the interior of this State, it is only within a few days that these have been made public by its introduction into the materia medica of the pharmacopœia of the society by the title of Lytta Vittata,* or potatoe fly. It has, for some years past, been used as a vesicatory by Dr. Israel Allen, of Stirling, and it is to this gentleman that I am indebted for my knowledge of its existence there, and for a quantity sufficient to establish its character by extensive experiment.

The natural history of this insect is still very imperfect, and the following is all the knowledge we have been able to obtain from the publication of Dr. Chapman, and the verbal information of Dr. Allen. The Pennsylvanian fly "has a very near resemblance, in outward form, to the meloe (vesicatorius) alatus viridissimus nitens, antennis nigris of Linnæus, or Spanish flies, as they are commonly called, but is rather smaller than those brought from Spain, and of a very different colour; the head is of a very light red, with black antennæ; the elytra or wing cases are black, margined with pale yellow, and a stripe of the same colour extends along the middle of each of them; the tarsi have five articulations, the mouth is armed with jaws, and

* Dr. Woodhouse, of Philadelphia, has discovered other species of the Lytta.—Med. Rep. vol. 3.

and furnished with tarsi." "I found them," says Dr. Chapman, "in greatest number in potatoe patches; and when the potatoes are young, they frequently devour all the green leaves; they are frequently found among beets and garden purslane, of the leaves of which they are very fond."*

The fly of Massachusetts, at least in its dried state, is from four to six lines in length; its head and elytra are uniformly black, and the latter want the margin and stripe of yellow, observable in the insect of Pennsylvania. Its belly is ash-coloured, and in the cavity of the abdomen, as remarked by Dr. Chapman, "is a hard, white substance, about the size of a grain of wheat, which, when powdered, appears like meal, and when rubbed with water, forms a milk-like emulsion." The thickness of the potatoe fly, which is nearly uniform throughout, is from one quarter to one third its length. When soaked in water, its parts may be more accurately observed, and it will be found nearly to resemble some species of the beetle, by the thickness and hardness of the coverings which protect the membranaceous wings. When recently pulverised, it exhales a faint odour, which by some, has been compared with that of the powder of liquorice root, and by others, to althea ointment. It generally appears on the vines about the end of July and the first week in August, and in some years, according to the account of Dr. Allen, in such abundance, that many pounds of them may be collected in a day. They inhabit the soil at the foot of the plant; they ascend in the morning and afternoon, but generally avoid the heat of the sun at noon. As they fly with great difficulty, they are easily caught; and are prepared for medicinal purposes, by shaking them from the plant into hot water, and afterwards drying them by the rays of the sun.

By the very liberal manner in which I have been supplied with these flies by Dr. Allen, I have been able to institute an extensive series of experiments, in different forms, on different persons; and they have never failed, even in a single instance, of producing all the immediate effects which I anticipated from their external application or internal exhibition. As it is unnecessary, however, to detail the greatest part of these, I shall confine myself to the few, which from peculiarity of constitution, or error of management,

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* Medical Repository, vol. 2, p. 174.

management, are most capable of illustrating the position we have assumed of their efficacy.

CASE I.—June, 1807. Samuel White, an invalid, about 45 years of age, has, for some time past, been subject to occasional attacks of hiccough. During one of these paroxysms, after the unsuccessful exhibition of various medicines, had a large plaster covered with the powder of Lytta Vittata applied over the region of the diaphragm. During the succeeding night, the patient was very restless, and by frequent change of posture, gradually moved the plaster over a great part of the abdomen; and when he awoke in the morning, found it resting on his thigh. The whole surface of the former was completely vesicated, and incipient blisters were perceptible on the latter. The hiccough was relieved, though not removed. In consequence of this extensive vesication, a strangury supervened, which was soon removed by opiates and mucilaginous drinks. The excoriated surfaces were dressed with the common resinous ointment, and soon healed.

CASE II.—June 10. Mary Wareham complained of intense pain in the head, for which blistering was prescribed. A plaster of the potatoe fly was applied, and the next day the vesication was found very perfect, accompanied with constant irritation of the part. The head-ache in a few days subsided, but the inflammation of the cutis was very considerable, continued for some days, and was succeeded by the formation of a number of boils about the size of hazle-nuts, and of extreme sensibility. These, at length, suppurated, and were finally healed by the application of the ung. resinosum cum oxido hydrargyri rubro.

CASE III.—January 12, 1808. Sally Sharp came into the Alms-house for rheumatic pains, extending from the hip-joint to the knee of the right leg. The pain in the last joint being most troublesome, a plaster covered with powder of *cantharides* was applied to its surface, and kept in that situation for twenty-four hours; she experienced no irritation on the part, and when the plaster was removed, there was no vesication perceptible: it was again spread with *cantharides* and applied as before; but no obvious effect resulted from its second application. The flies were undoubtedly in good order, since a great number of persons had been completely blistered by powder from the same parcel. A plaster of *potatoe fly* was then substituted, and the next day I found, with much satisfaction, that it had been followed by a complete vesication. The blister,

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to use the homely phrase of the patient, had run half a pint, and for a time the pains were alleviated.

If necessary, I might bring forward a multitude of cases in support of the efficacy of the Lytta Vittata; but these, I think, are sufficient to establish the fact, that as a vesicatory, they are at least equal, if not superior to the cantharides usually employed for that purpose in this country. Since then they are capable, even when externally applied, of producing a very considerable irritation in the urinary organs, we should judge, à priori, that a much more positive effect would result from their internal exhibition; and accordingly, I endeavoured to ascertain the truth of the position by experiment. Having about one drachm of the flies remaining of the parcel which I first received from Dr. Allen, it was infused in about six ounces of proof spirit, and the whole was undisturbed for some weeks. The tincture, therefore, I presume, was saturated, as the proportion of the flies was greater, and the infusion longer continued than the European Pharmacopœias have ordered in the preparation of the ordinary tincture of cantharides.

Case IV.—July 1807. Sarah Peirce, aged 70, was labouring under a paralysis of the neck of the bladder. Her urine passed off insensibly, and her situation rendered her uncomfortable both to herself and to others. The tincture of lytta vittata was prescribed in doses of ten drops twice a day, and these were gradually augmented to twenty drops three times in the twenty-four hours. In the course of few days a slight irritation was produced in the urethra, and the power of retaining her water had gradually increased. At the end of three weeks the incontinence of urine had altogether ceased.

Case V.— J. Nelson came under my care January 25, 1808, for a gonorrhœa of long standing. His symptoms were slight irritation during the passage of urine, and a discharge of a yellowish white matter, opake, and in considerable quantity. He was ordered to take fifteen drops of the tincture three times a day. On the 27th, the discharge of purulent matter had increased, accompanied with much scalding immediately after the passage of the urine; the dose was increased to eighteen drops three times a day. January 30th. Discharge of matter from the urethra lessened; complains of pain on making water, and of a soreness of the fauces, extending into the œsophagus. February 2. Discharge much abated, and the irritation

ritation in the urethra rather less. In consequence, however, of the increased soreness which was now experienced even in the stomach, the medicine was discontinued. During its exhibition, the renal secretion was much greater than usual.

The tincture has been administered internally in many cases of diminished sensibility of the urinary organs, in gleets, and as a diuretic in dropsy; and it has uniformly been found in all to increase the discharge of urine, and to produce considerable degrees of irritation in the urethra and at the neck of the bladder.

It has also been applied externally as a vesicatory, and was always found to answer the purpose intended, though its effects were I think less complete than resulted from the application of the fly in substance.

From all therefore that I have been able to collect from the communication of Dr. Chapman, the verbal information of Dr. Allen, and the results of my own experiments continued for some months and made on more than fifty different cases, I think I shall be justified in drawing the following conclusions.

1. That the powder of the Lytta Vittata, or potatoe fly, when suffered to rest for some time on the cuticle, is capable of exciting inflammation and producing an effusion of a serous fluid between it and the cutis vera.

2. That the discharge in all cases is equal, and in many superior to that which results from the application of the powder of the cantharis; a remark which coincides precisely with the observations of Drs. Allen and Chapman. The superiority of the potatoe fly in this respect is doubtless owing, in some degree, to recent preparation. The cantharides are brought from a great distance, and there is sufficient reason for believing that their active qualities, like those of other medicines, in general, are impaired by age. Hence therefore this fact may be used as an argument in favour of the general adoption of our indigenous production, since it exists among us, and may be always obtained in a comparatively recent state.

3. That the saturated tincture of this fly possesses the vesicating property of the substance, but in rather an inferior degree.

4. That both the powder and the tincture are capable of inducing strangury by their external application.

5. That the vesication by the potatoe fly is effected in a shorter time than by the cantharis.

6. That

6. That when taken internally these flies produce all the effects, apparently in the same degree, as result from the exhibition of cantharides.

7. That the inflammation and subsequent secretion of purulent matter, are in general greater from the use of the potatoe fly than of the cantharis.

To the Editors of the Medical and Phyfical Journal.

Gentlemen,

In your Journal of the present month, there are some observations upon cases which require amputation, where no tourniquet can be applied from its nearness to the trunk, and where there is sufficient room to operate without opening the joint. Thus your correspondent, in the amputation of the shoulder-joint, as the first step, tied the artery in the axilla: I will take the liberty of putting the question to him, whether a sufficient and steady pressure cannot be made upon the artery above the clavicle, so as effectually to stop the current of blood in the axillary artery; which if it can be done, is certainly far preferable, considering the hazard of such an operation, as tying the artery in the axilla, situate in a deep cavity, surrounded with nerves and veins; as well as the consideration of putting the patient to unnecessary pain. That a sufficient pressure can be made on the artery in the groin, so as effectually to stop the current of blood in the femoral artery, I am well convinced, from the numerous operations for the femoral and popliteal aneurisms which I have witnessed.

I am, &c.

A YOUNG SURGEON.

March 7, 1810.

CRITICAL ANALYSIS
OF THE
RECENT PUBLICATIONS
IN THE
DIFFERENT BRANCHES OF PHYSIC, SURGERY, AND MEDICAL PHILOSOPHY.

An Enquiry into the Nature, Causes, and Cure of HYDROTHORAX, *illustrated by interesting Cases, and many living Examples of the Success of the Mode of Treatment recommended.* By L. MACLEAN, M. D. 8vo. pp. 519. London, 1810.

It has very justly been observed that the advancement of Science has been much accelerated by a predilection which many of its Professors have entertained for some one of its branches. The powers of the mind thus concentrated on one subject, must necessarily atchieve more than when directed to the contemplation of a wide and extensive range of objects. Impressed with such a conviction, we are ever happy to congratulate the medical world upon the acquisition of any new work, when it contains a history of the labours of a medical practitioner, exclusively devoted to the investigation of one disease. The publication of the volume which we now beg leave to announce to our readers, is of this nature; and its author was first induced to direct his attention to the disease termed *hydrothorax*, because (as he informs us) it has been hitherto, in a great measure overlooked, or so slightly touched upon, as if it claimed no more notice than the common disorders of every season; yet, whether we regard the frequency of its occurrence, the formidable aspect it assumes, the extreme sufferings of the patient, or the almost uniformly fatal termination to which it leads, few demand investigation more than dropsy of the chest. He, however, with much candour, acknowledges in his Preface, that "If the lovers of novelty should look for new remedies, they will be disappointed; but they will find old medicines, or those in common use, applied in different forms and combinations, with different views, and he presumes to hope, with a degree of success unparalleled in the history of the disease:—they will find that in every instance it may be relieved, that in a considerable number it may be kept in check for months, and years, with long intervals of repose, or comparative ease and comfort to the patient; and that in some, it may be perfectly and permanently cured, even under the most unpromising circumstances. This, it is presumed, is more than can be accomplished, in the present state of our knowledge, from any mode of treatment hitherto adopted." If such be the success which has attended his inquiry into the cause of this disease, he has certainly atchieved much for the practice of medicine, by removing one of its most lamentable *opprobria*, and

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we may confidently assure him, that the lover of novelty, so far from requiring any apology to appease his indignation, will terminate the perusal of the book with infinite satisfaction and delight; whether, however, an object so desirable has actually been obtained, we shall endeavour to ascertain, by a candid and impartial inquiry. The objects which the Treatise comprises, may be arranged under four heads, viz. I. The Nature and Symptoms of the Disease. II. Its various Causes. III. Method of Cure. IV. Cases illustrative of the plan of Treatment. An analysis of each of these divisions, we shall in succession offer to our readers.

After having taken a view of the different definitions of hydrothorax, as given us by Sauvage, Vogel, Sagar, and Cullen, our author proposes to us an essential character, which appears to him less equivocal than those of the foregoing authors, which contain a train of symptoms which are neither essential to the disease, nor inseparable from it; but so protiform and insidious are the symptoms, that we fear he has succeeded but little better than preceding nosologists in framing an unequivocal definition. He then enters at some length, into an investigation of the *precursors*, or early signs, by which the disease may be detected in its incipient stages; these are valuable considerations for the medical practitioner, and we regret that our author's experience has not enabled him to throw more light upon this obscure part of the subject, for whatever merit we may be inclined to give him for his judicious selection, and arrangement of the *precursors* which have been already detailed by other authors, he has certainly added no new information which might enable us more easily and more infallibly to detect the early existence of this "*anguis in herba.*" He next proceeds to the enumeration of the *particular* symptoms, in which he traces their origin, order of precedency, progress, and termination. The derangement of the vital functions is evinced by an impeded respiration and palpitation of the heart, with a corresponding irregularity of the pulse; there is a difficulty, or impossibility of retaining the recumbent posture, especially when the patient is placed on one side; the aspect of the countenance is pallid and livid, and the urine is scanty and high coloured; œdematous swellings, with cold and senseless extremities appear, and the patient is often suddenly aroused from sleep by a most distressing sense of suffocation. Such he informs us may be considered the leading characteristic symptoms of the disease; although many others, not essential to it, very frequently occur, such as cough, expectoration of blood, erratic pains in the region of the chest, external swelling, and fluctuation of water.

Our attention is next directed to the diagnostic symptoms of *dropsy of the pericardium* and of *hydrothorax*; here our author has rather convinced us of the intimate and extensive knowledge which he possesses of the opinions of other writers upon this subject, than afforded us any original observations of intrinsic worth; for we cannot be so unjust to our readers, as to omit observing, that

our own experience concurs with the testimony of other practitioners, in inducing us to believe that every symptom which is adduced as pathognomonic in *hydrops pericardii* occurs differently modified, and variously combined with others, as well in hydrothorax as in every morbid alteration in the structure of the heart, or any thoracic viscus; the other diseases with which hydrothorax may be confounded are then detailed; but as the experienced practitioner will find no difficulty in easily distinguishing them, we shall abstain from any farther observation. The prognosis is next considered, which we are informed, must be entirely guided by our knowledge of the cause of the disease; an eulogy on the importance of dissection, in advancing our knowledge of this disease, then terminates the first division of the subject.

Amongst the occasional causes of dropsy, our author very properly regards every circumstance which tends to depress or destroy the vital energy of the body; and he considers, that the inordinate potation of porter, ale and beer, more frequently excites the disease *hydrothorax*, than the abuse of other fermented liquors; this he explains by attributing to them a two-fold mode of operation, by undermining in common with other intoxicating liquors the powers of the constitution, and by favouring an accumulation of fat without imparting a proportionate increase of strength; hence those organs essential to life, are overwhelmed with fat, and are consequently inadequate to perform their proper functions.

We are happy to see that our Author considers that the different species of fermented liquors, individually produce different effects on the organization of the body. Whether this is explicable upon the supposition that they impart different proportions of *oxygen* and *carbon* to the blood, we shall not pretend to decide; the fact itself is sufficiently evident, and a farther investigation of the subject, conducted on the solid basis of experiment, would afford many valuable materials for the speculations of the physiologist, and throw considerable light upon the theory of *Dietetics.*

With respect to an accumulation of fat producing Hydrothorax, we cannot but entertain some doubts; the numerous dissections the writer of this article has seen, in which the greater proportion of hydrothoracic subjects exhibited no accumulation of fat about the vital organs, induce him to believe it is very rarely the cause of this disease.

Dr. Darwin's celebrated theory of the *Retrograde action of the absorbents* is then examined at some length, the existence of which he concludes has neither been proved by experiment or rational induction.

The influence of the biliary secretion in the production of dropsy, he considers as not sufficiently understood; it is generally supposed, continues he, that a diseased liver is concerned only in producing dropsy by preventing the free return of the blood of the *vena portarum* and *inferior cava* to the heart, but its influence is exerted earlier, and is far more extensive than is generally imagined.

gined. He conceives that bile, although an active stimulus to the bowels, is a sedative to other organs, and illustrates his opinion by adducing as an example the torpor and languor which pervade the bodily and mental functions in jaundice. This being conceded, he concludes that the urinary secretion and lymphatic absorption will be always more or less diminished, and that a corresponding tendency to dropsy will ensue.

We next proceed to the consideration of his peculiar plan of cure; and as this division of the subject is not only the most interesting to the medical practitioner, but the most important and decisive in establishing the credit and character of its Author, we shall endeavour to exhibit to our Readers some of the most prominent features of his treatment. He does not profess, as we before stated, to introduce to our notice any new medicines, but proposes to effect all that is desirable by a novel and happy combination of usual remedies. We must here be allowed to observe, that the fashion of combining medicines in every proportion and degree, has more or less obtained amongst the disciples of different schools; we sometimes find the prescription of the physician consisting of twenty compound articles, whilst the same disease is frequently combated with equal success by another physician by the exhibition of a simple herb. In general, the idea of combining a number of remedies with the hopes of the compound partaking of the virtues of each constituent is altogether fallacious; and it is our opinion, that the physician who prescribes with the greatest simplicity, prescribes the best, although the maxim is, doubtless, liable to many exceptions. We do not, however, mean to depreciate the merits of our Author's plan by any preconceived opinions. He prefaces the subject by some general observations, in which he offers several valuable remarks on the different effects of diuretic medicines; "there is," says he, "such a material difference in their mode of operation, that there appear just grounds for dividing them into three different classes, viz.

1. Such as act chiefly, if not solely, on the kidneys.
2. Such as act at the same time on the kidneys, the absorbents, the exhalents, and other secretions and excretions.
3. Such as act solely on the absorbents.

Under the first class, nitre is the only one which ought to be comprehended; under the second, by far the greater number of diuretics in daily use may be included; under the third class, says he, I know no substance of which I dare speak with confidence, except the fox-glove. "The practical inferences arising out of these facts and observations seem obvious," continues he, "for if by experience it be ascertained, that these substances all act differently, is it not reasonable to infer, that by blending and combining them according to their specific powers, a benefit is more likely to result than when separately administered, partially applied, and probably not to the organ which most needs their aid?" He tells us, that if the patient be advanced in years, or his strength exhausted

by intemperance, a remedy should be selected of such combined powers as might answer every indication at once; a combination of foxglove, certain tonics, saline diuretics, and calomel in moderate doses, will be found the best in such cases; but if the disease occur in delicate subjects, without any organic affection, the digitalis alone will generally succeed; but its salutary effects will be promoted by tonics and moderate doses of the fixed vegetable alkaline salts. When it happens in fat, corpulent subjects, with a sluggish and inirritable fibre, such a combination as will produce the most extensive operation should be prescribed; he then descends into a consideration of particular remedies, which comprehends *blisters*, whose effects he considers important; *digitalis* in the form of an infusion of its leaves, the *squills*, which he thinks should always be combined with some other diuretic; *saline diuretics*, which though precarious and uncertain in their operation, in combination with other means, and largely diluted, will be found powerful auxiliaries; *crystals of tartar* he thinks should be used with caution, especially in thin, delicate habits, where the general strength is much impaired; for it excites the action of the lymphatics to such a degree, as not only to absorb the effused fluids, but also fat and muscle.

Kali præparatum he is inclined to prefer, in many cases, as more safe and certain in its operation, which will not only remove the water, but in combination with aromatics strengthen the digestive organs; its operation seems to be confined chiefly to a morbid state of the absorbents, since in health it produces but little diuretic effect; *broom ashes* owe their virtues evidently to this substance contained in them; the diuretic virtues of this alkali are promoted by the nitrous and other æthers, by the turpentines and certain balsams.

Æther and its preparations he considers as excellent auxiliaries in this disease; they afford immediate relief in distressing respiration; the *nitrous æther* he considers as possessing less antispasmodic, but greater diuretic powers; the *resins and resinous balsams* should be exhibited in combination with squills and crystals of tartar, and will be successful principally in those cases where there is torpor of the liver; *laxatives* should always be employed, when the body is not naturally open; and such as are known to act at the same time on the kidneys; a combination of calomel and crystals of tartar may be given at night, and an infusion of senna the following morning; *calomel and other preparations of mercury*, our author considers more salutary in their agency than is generally supposed; "ample experience, says he, has enabled me unequivocally to ascertain their efficacy." Much will depend however on the quantity and mode of exhibition; if any of its oxyds or saline combinations be introduced into the stomach, in their crude, unqualified state, they will tend rather to defeat, than to promote our wishes. He prefers calomel, because it is less liable to variation of strength, and is more readily blended with other substances;

substances; its virtues will be always materially increased by previous trituration with some saline substance; and he asserts that two grains thus prepared and blended, will produce a more certain effect, than ten in the ordinary way, and without any, or comparatively with very little, pain or irritation. Whenever there is reason to suspect any derangement in the lymphatic functions, he recommends us occasionally to stimulate the bowels with mercurial purgatives, and at the same time, to charge the habit with it by giving one or two grains of calomel every night. *Blood-letting.*—Cases he thinks sometimes occur, where this operation is absolutely necessary, an example of which is, when the congestion and the accumulation of blood in the right side of the heart, and in the head, (owing to the interrupted circulation through the lungs) threaten suffocation.

The tonics which should be employed after the removal of the water, must in great measure be directed by the circumstances of the case; in general, the light infusions of gentian and columbo, in combination with steel and myrrh, are to be preferred; but if there is a hard dry cough with viscid expectoration, he recommends the exhibition of steel in conjunction with the balsam; *opiates* in this disease he thinks admissible, when the cough is very urgent.

Elaterium, our author has but seldom prescribed, "yet," says he, "from the few trials which I have made, I am inclined to think that it might be found useful in certain cases, cautiously administered in combination with other remedies, more especially in those, in which the digitalis may have failed. *Gamboge* may be rendered perfectly mild, by triturating it with saline laxatives and diuretics. He then closes his catalogue of remedies, with some observations on the operation of *paracentesis* upon which he observes, that it will not be expected that he should be one of its advocates, when the means he recommends, will, in almost every instance, readily remove the water; he does however acknowledge, that there are some cases in which it should be performed. We are next favoured with some remarks for the regulation of the diet; in general, we are told, such food should be selected which contains the greatest quantity of nutriment in the smallest bulk; thus flesh of mature animals should be preferred to that of young ones, roasted meats to boiled; vegetables should be sparingly used, except those that are *farinaceous*, as rice, which may be fully allowed. With a series of such observations, the subject of cure is dismissed, and would we could say, that part of the work concluded; but the reader has yet to pass through a section consisting of thirty-six pages, upon the *modus operandi* of Foxglove.—We shall abstain from giving an analysis of his opinions, as they are purely speculative, and possess but little novelty; true to the cause of Cullen, he contends for the direct sedative operation of this medicine, and denies altogether the stimulant effect attributed to it by the partizans of the Brunonian school. The author appears indifferent, as to the fate of the speculative opinions he has advanced, and observes, that whe-

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ther they be confirmed or refuted, the practical part of his Essay will not be invalidated.

We wish he had not so far mistaken his road, as to have quitted the sober and steady path of experience, to range in a field of doubt and speculation; we must be excused for expressing our disapprobation of it, and our regret at his not having left the subject to the pen of other logicians. Upwards of a hundred cases compose an Appendix, which illustrate his peculiar plan of treatment, and the success of it.

Thus terminates the work which we have endeavoured to analyse; and we trust, our readers will coincide with us in considering, that the practical information it imparts is of considerable importance; and although we must confess, that the confidence with which he avows the superiority of his treatment, inspired us with hopes of success beyond what the perusal of his work has realized, or, indeed, the nature of the disease could render possible; yet, we must acknowledge that his plan is judicious, and the effect of it successful. The style of the writing is, upon the whole, well adapted for a practical essay; perspicuity is studied rather than embellishment, and although by a more judicious selection of words, the feeble and inharmonious period would often become more energetic and pleasing, yet we seldom find a passage whose language is distressing to the ear, or whose meaning we do not at once comprehend.

Annual Report of the Royal Humane Society, 1809.

It is pleasing to contemplate the beneficial effects resulting from the exertions of this laudable Institution, there having been no less than 182 claimants for its rewards last year, 118 of which were cases of imminent danger restored to health, or two successful cases at least in every three.

The volume commences with a neat tribute to the memory of the late Dr. Hawes, whose ardent zeal and indefatigable perseverance are well known, and who may justly be considered the Founder of this Society. It appears from the report here given, that the Doctor first took the idea of establishing this Society from the accounts published of a similar institution in Holland; and as many persons may be gratified by a detail of the humble origin of this now flourishing body, we shall transcribe the whole passage.

"Holland, being intersected by numerous canals and inland seas, its inhabitants were, consequently, much exposed to accidents by water; and many persons were drowned from the want of proper assistance. Hence, in the year 1767, a Society was formed at Amsterdam, which offered premiums to those who saved the life of a citizen in danger of perishing by water: it proposed to publish the methods of treatment, and to give an account of the cases of recovery. Instigated by this example, the Magistrates of Health at Milan and Venice issued orders, in 1768, for the treatment

ment of drowned persons. The city of Hamburgh appointed a similar ordinance to be read in all the churches, extending their succour, not merely to the drowned, but to the strangled, to those suffocated by noxious vapours, and to the frozen. The first part of the Dutch memoirs was translated into the Russian language, by command of the Empress. In 1769 an edict was published in Germany, extending its directions and encouragements to every case of apparent death, which afforded a possibility of relief. In 1771, the Magistrates of the city of Paris founded an institution in favour of the drowned, &c. And the repeated instances of success in each country abundantly confirmed the truth of the facts related in the Amsterdam memoirs. These memoirs were, in 1773, translated into English by Dr. Cogan, in order to convince the British Publick of the practicability, in many instances, of recovering persons who were apparently dead, from drowning. No sooner were they translated than they engaged the humane and benevolent mind of Dr. Hawes. His very soul was absorbed with the animating hope of saving the lives of his fellow-creatures: but, in making the attempt, he had to encounter with ridicule and opposition. The practicability of resuscitation was denied. He ascertained its practicability, by advertising to reward persons, who, between Westminster and London bridges, should, within a certain time after the accident, rescue drowned persons from the water, and bring them ashore to places appointed for their reception, where means might be used for their recovery, and give immediate notice to him. Many lives were thus saved by himself and other medical men, which would otherwise have been lost. For twelve months he paid the rewards in these cases; which amounted to a considerable sum. Dr. Cogan remonstrated with him on the injury which his private fortune would sustain from a perseverance in these expences; he therefore consented to share them with the public. They accordingly agreed to unite their strength, and each of them to bring fifteen friends to a meeting at the chapter Coffee-house, with the express intention of establishing a Humane Society in London: this was happily accomplished in the summer of 1774. The objects of this Society was then, like that at Amsterdam, confined to the recovery of persons who were apparently dead from drowning."

Various were the obstacles the first promoters of this benevolent plan had to encounter, and the striking novelty of it did not in this instance interest the public so strongly in its favour as is usually the case; perhaps there may be much truth in the following remark; for though we are very far from being inclined to attribute selfish motives to the supporters of our numerous public charities, yet it must be acknowledged, that the gratification which arises from bestowing a personal favour on distressed objects, has now and then no inconsiderable weight.

" There was another obstacle to the rapid success of our Society. In other institutions the subscribers have the means of affording

fording relief to some sick or distressed neighbour; they have a something at their own disposal; some good they can personally confer, when an application is made to them for that purpose. We have nothing of the kind; we have only an Anniversary Sermon to present to you, and this Annual Report."

As usual, directions are given for the treatment of persons apparently dead, and a description of the Society's apparatus is subjoined. Among the engravings contained in this volume is one of a portable bed, an ingenious contrivance of the Rev. Mr. Davies, of Leicester, the object of which is to afford a general warmth to the whole body, and it seems very well adapted to the purpose, and must prove extremely useful when employed in cases of suspended animation. The Society have also in the directions for prevention of premature death, turned their attention to several subjects, which though not strictly coming within their original plan, are yet highly important in themselves, such as the method of preventing the effects of lightning; the fatal effects of drinking cold water when a person is warm; the effects of excessive cold; the danger from exposure to the excessive heat of the sun; and the burning of the clothes of females; upon all of which subjects any remarks are unnecessary. Among the cases of recovery, is an excellent one, communicated by Mr. Addington, in which the progressive symptoms from a state of apparent death to complete recovery, are well described. Bleeding from the arm was employed, seemingly with every good effect, and Mr. Addington has subjoined some judicious remarks, in which he contends for the utility of that remedy, and endeavours to controvert the opinion of those who consider debility as the chief source of danger in these cases. Much attention has lately been paid to the symptoms of various diseases, with a view of ascertaining what share the brain has in producing them, and whether debility is so frequent a concomitant of diseases, as has been supposed; and as this question is likely to come before us in a variety of shapes, we shall embrace a future opportunity of offering a few remarks on this important subject. A List of the Officers and Members of the Society closes this interesting little volume.

A Series of original Experiments on the Foot of the living Horse, exhibiting the Changes produced by Shoeing, and the Causes of the apparent Mystery of this Art. By Bracy Clark, Veterinary Surgeon, F. L. S. &c. 4to. London, 1809.

The importance of the horse to mankind, in war and the chace, was known in the earliest ages, and his uses have so much increased with the advancement of civilization and the refinements of luxury, that man may now be considered as a real Centaur. Without the strength, swiftness and docility of the horse, he can neither defend himself from his enemies, procure his necessaries, or preserve his health. And yet it has somehow unaccountably happened,

pened, that this noble, grateful, and generous animal, both in health and disease, has till very lately been committed to the care of persons the most unqualified for such a task. It is true, that the wants of the horse are very few; and his diseases, as never brought on by folly or intemperance, are therefore but few. Since, however, the real value and importance of his services, and the *present* shortness of his serviceable life, have been fully appreciated, men of science and education have been encouraged to devote their time and attention to his health and preservation. Our author may justly be ranked in this class. He has only published the first part of his intended work at present; in which, he explains the structure, anatomy, and uses of the several parts of the horse's foot, when completely formed, and in a state of Nature. He then relates his experiments made for several years on the living horse, in order to demonstrate the changes produced on the foot by the present method of shoeing, and the consequences of those changes in shortening the useful life of the animal. As these explanations must necessarily be made the foundation of his future reasonings, and plans for obviating those evils and prolonging the services and comforts of a servant so valuable, he has been particular in describing the structure and uses of the several parts of the foot. This has obliged him, in a few instances, to coin a new term, or limit the use of an old one; and indeed, so beautifully are all the parts adapted to each other, and the whole to the speed, weight and strength of the animal, that we can assure the philosophical reader, that he will be well repaid for the time he employs in acquiring a correct idea of the horse's foot, in a state of nature. To persons totally unused to anatomical descriptions, the subject will probably appear complicated; but we think the force of the author's reasoning, and the truth of his conclusions, cannot be properly understood, without a knowledge of the structure and uses of those parts which he has accurately described in the beginning of the book. These are, the heels, the wall or hoof, the frog, the sole, the horny heels, the bearings of the hoof on the ground, the wear of the hoof, and the cartilages of the foot. The description of these parts is assisted by plates, but the stile is so condensed in general, that we apprehend some readers will think the subject difficult to be understood. The author concludes this anatomical and physiological part of his book with stating,

"Such appear to be the leading principles of construction in the foot of the horse in each separate part, and in the whole combined, as far as our humble reflections and researches have enabled us to consider them. It is these principles, when rightly understood, that can unfold the obscure and intricate effects of the shoe, and these alone: for the shoe, from its nature, cannot in any respect participate in these properties of the foot, and hence the cause of its mischievous effects.

"The assertion, at first, may appear singular to those who have not investigated these matters with a close attention, or viewed the chain

chain of connexion of these things from the beginning of the services of the animal to his termination at the slaughter-house, through the different periods of his rapidly destructive course; but it is nevertheless true, that the shoeing the animal is, with its multifarious train of consequences, that for the most part has been the root of so many evils to the horse and to mankind, not only by its immediate operation on the structure of the foot, but by its entailed consequences in the use of him, that he is so often rendered unsatisfactory, vexatious, and dangerous through it: for these errors in the management of the feet are ever visited with unmerited punishment upon the animal himself, in order to do away or overcome its consequences by exciting other feelings, though for the most part in vain; and it is from this that the vehicles for draught are filled with all our best saddle horses, setting aside all considerations of humanity, which for certain reasons we purposely exclude from this part of our labours; and it may be with truth averred, that such is the simple nature of the animal himself, and his disorders, exclusive of the shoeing and its effects, that there would be little room for the exercise of *knowingness* or trick respecting him by stable-men or others, if these effects were fully understood, or could in any way be removed; and the dread many have for very good reasons of using horses, or having to do with them at all, would in a great degree be done away.

"For let whatever will be said about these effects being known of the shoe, it is clear from the readiness with which people consent to have their horses shod at any age, on the first summons of the breaker-in of the horse, that they view the shoe merely as protecting the foot, and are not aware of its insidious effects; nor do they afterwards exhibit the least jealousy or anxiety about it, but would rather, as we often observe, treat the proposition of its removal as a piece of inhumanity.

"And we derive some consolation from one reflection on this subject, that even with a continuance of the present method of shoeing, a considerable share of the evil may be removed, and the rapidity of the destruction be greatly in all cases prolonged under certain regulations, though we must admit also there are some services or situations in using the horse, that do not appear to allow of much assistance: but this will be made the subject of future consideration.

"If what we have stated respecting the nature of the horse's foot be true, the effect of the shoe will be almost presumed without any demonstrative evidence; but though reasoning may easily err, and imagination lead us astray, still the actual experiment, if truly related, will ever stand as plain matter of fact, that can neither err nor be denied; and the course of the experiment will also unfold a variety of matter for reflection respecting the foot, which would not properly attach to any thing we have heretofore noticed. We proceed, therefore, to the consideration of this first experiment on the effects of the shoe, in which the public, as far

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as they are interested in this important inquiry, and especially myself, are greatly indebted to the obliging conduct of Mr. George Hobson, both in providing the subject, and in allowing the mare on all proper occasions to be brought for examination, and the prosecution of these experiments; for next in every state to man himself, in public utility, will be what respects the services and true knowledge of this animal, and how we can best obtain and prolong the period of his services."

The experiments by which Mr. C. demonstrates the pernicious effects of shoeing upon the feet of the horse, consist in taking casts with plaster of Paris, repeating them at proper intervals, and then comparing them with each other. These afford the particulars of the change that takes place in the size and form of the foot, upon which the subsequent tenderness and lameness principally depend. Other circumstances unfolded themselves to him, as the experiment proceeded, which were not foreseen orexpect ed. We shall present the reader with a few of the details.

" A young mare of great beauty, and turned of five years old, was brought to my shoeing forge from Weymouth Mews, to be shod, that had been bred by George Hobson, Esq. and permitted to run wild and unshod till her fifth year, that her strength and growth should be as much as possible compleated before she was brought into use. The opportunity so extraordinarily afforded me of making the expeirment was not to be lost: for a second, I thought, might not occur; and such another has in reality never occurred to this day. Timid, and unused to have her feet meddled with, to get an impression was attended with some difficulty; the plaster of Paris was poured upon her foot held sole upwards; but before it could well set she grew uneasy at the position, and dashing her foot to the ground, broke it in a thousand pieces, and a second also in the same way. After this, as might be expected, she grew more impatient at being handled, and I almost despaired of succeeding. Being surrounded by many persons, I hoped to effect it better if she was led alone to the stable; and giving her a feed of corn, the better to take off her attention, I placed the foot, unperceived by her, in a bowl containing plaster wetted with warm water, that it might set the more readily. After waiting a few minutes, and the plaster had become perfectly hard, I drew it away from the foot without much difficulty, and it exhibited a complete impression of her foot in all its circumstances. This was done on the fourth day of June 1804.

" After smearing this impression, or mould, with a little lard, to prevent adhesion, some fresh plaster was cast upon it; I thus obtained the figure of the foot represented in *Plate* I; and for the beauty and symmetry of its parts, nature perhaps does seldom surpass it.

" That the reader who is not much used to the study of horses may make himself acquainted with the parts of the horse's foot, we shall, says Mr. C. here describe them in a general manner. They are

are given for this purpose as large as in nature, that there might be less possibility of error; for the natural horse's foot has never, I believe, before been very truly represented; and by doing this he will be the more prepared to trace the changes it is doomed to undergo by artificial aid. The representation has been admitted, both by the draftsmen and engraver, to be attended with difficulty; and, but for the kind assistance of my very worthy and ingenious friend Mr. Sydenham Edwards, it would not have been nearly so well represented as it is; we may also remark, that a tolerably distant view of it, from its being so large, makes it appear to more advantage than a nearer one."

The description of the several parts then follows, for which, as well as the plates, which are necessary to illustrate them, we must refer to the work itself.

Exactly a year and nine days after the first application of the shoe, a second cast was taken from the same foot, of which an engraving is given. "During the whole of this period the shoeing smiths, who were as steady men to the full as any others in their line, were left to the practice of their own art, without the smallest interference or control of any kind on my part. They were aware of the cast being taken from the foot, and were not less careful on that account in their attentions in shoeing her."

"Let us now," says the Author, "mark with precision the differences which have taken place, and see what have been the effects of fixing the foot without intermission for a period of twelve months to an inflexible iron ring, for such is briefly the fact with respect to the nature of the shoe, by whatever name it may be called; for the word *shoe* has had its fascination also in concealing its effects, by reminding us of the comforts we derive from our own shoes made of leather, and elastic to the foot, to which neither in the material of which it is made, or the mode of its application, has it the smallest correspondence; of such force are names that mere chance often confers on things in blinding our views of their actual nature.

"The original state and proportions of the foot being before us, and perfectly preserved, we are enabled to make an exact comparison of its former and present condition; a diminution of volume throughout is strikingly manifest, but more so in the elastic parts. A mechanical hardness marks the appearance of it, in place of the flowing easy outlines observable in the original cast. The evident competency in the parts to their respective offices, which the eye recognizes in the former, is done away in this; and such is the general diminution of the foot, that actual lameness would naturally be supposed the effect of so much alteration unless explained, for this does not take place for the following reasons, — that the parts have suffered their alterations slowly, and, from being in their nature yielding and elastic, have given way to the effect of he shoe, as far as the diminution extends at present, without much esistance; and above all, that during the application of the shoe

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the parts that have most suffered are not called into action, nor are their uses required, so that the foot by degrees assumes a new sort of existence, and gradually adapts itself, as much as a living part can, to the effects of the iron circle, and cannot afterwards do without it.

" We now examine the nature and extent of these changes wrought by the shoe; first observing, that in drawing away this second impression we were surprised to find with how much greater force it was held, and difficulty it came away from the foot, than the former cast did, and as immediately appeared from certain alterations that had taken place in the relative situation of the parts of the foot, as also from the slanting surfaces of the bars and frog having assumed a more perpendicular direction.

" The elastic parts of the heels have lost their swelling, rounded, and beautiful appearance, by the sinking of the cartilages and the loss of the elastic matter within; and the surface they now present is an ugly flat slope towards the base of the frog.

" The horny heels, from one to the other, in the original state of the part, measured somewhat more than four inches; in the second cast scarcely three. The foot, measured across its widest part, viz. at the greatest swell of the quarters, was in the original cast nearly five inches and a half; in the second cast it was four inches and seven-eighths. The actual length of the foot, we may remark, has not been much changed; which seems to confirm the circumstance that the cause operating these effects had been lateral principally, and serves to evince its having been the effect of the nails.

The frog had lost, through its being wasted and cut away by the smiths, the rounded swelling and projection we have distinguished by the name of the *Cushion*; and its lower surface, though its substance was so diminished, was lower by near one fourth of an inch than the horny heels, or wall; for it may be recollected, in the account we gave of the frog, that this part was then three-eighths of an inch within this level. This appeared to arise in part from the condensation of the horn of the heels, from the constant pressure of the shoe upon them, and also from the circumstances we have before explained, on the cause of this descent of the frog, which it will be unnecessary to repeat. The texture of the frog, from an agreeable yielding and elasticity, had become hard and unyielding to any impression of the fingers; and its sides, which at first were gently inclining or sloping to the commissure, had become almost perpendicular. The *cleft* at the base of the frog had become partly closed, forming a rounded ill-formed hole, and much deeper than the cleft of the natural foot. The base of the frog, which was in the natural foot of the width of two inches and a half, had now become hardly so much as two inches. The bars had considerably lost their sloping direction, and had become more perpendicular and encroaching upon the sides of the frog, and consequently more disposed to compress it.

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"The sole appeared somewhat more arched or cupped than formerly, but the degree of thickening it had undergone, as also the elasticity it had lost could not be accurately ascertained in the living subject. Thus we see the beautiful and useful symmetry of nature's mould, no part of which is without its use, has been changed by artificial restraint to deformity and incompetence. Many there are who have added unnecessarily to the obscurity of these cases by confounding them with, or supposing them the effects of standing in the stable; of which, in the next part, to set things in a more clear light, we shall give proof enough from actual experiment, that however inimical to the feet the stable may be, it is wholly incapable of producing such powerful effects as these, which can be shown most convincingly in two ways; viz. by shoeing, and turning the horse to grass, when the same effects will ensue; and also by keeping a horse unshod in the stable, which we have for years done, when no effects of this kind have taken place. The worst cases of contraction also, we may observe, are with stage horses, that have little standing in the stable.

"No shoeing-smith or dealer would complain of the foot as it appears in fig. 2; though it is a wide departure from the model which nature has established for the foot of the horse. And so little has this fact been attended to, even by those better informed than dealers or smiths in these matters, that I remember some years back Mr. St. Bel, the first professor of the veterinary college, sending forth to the world with his Essay on Shoeing, as a model of a perfect foot of the horse, one more diminished than this; nor did he know that nature, from the use of the shoe, had suffered much change; nor did any of us studying at that time at the college at all suspect it, at least, that there was in these cases much alteration of an injurious nature.

"If horses were brought there with contracted feet, as must have been daily the case, they scarcely obtained notice, from our habits of constantly seeing them in this state, unless they were attended with very great crippling and tenderness indeed; for it is most usual with people finding defects of this sort to avoid the evil by parting with their horses, and to take as little notice of the fact as possible; and many there are who stoutly deny there is any such thing as tenderness in the fore feet of horses; and some there are who appear insensible of it till a fall convinces them of their danger, when they are apt to become as much too timid as before they were too confident. Horses of this description, it has been before stated, can still, after they are sold, be made serviceable; for employ will never be wanting for the cheap horse as long as severe bits and a bearing rein can keep them up, or the thong can draw from them an exertion, for harness is the only resource while they last. And these defects of the feet were somehow or other considered as casually arising from a defective nature of the foot itself, or from bad shoeing, as it was termed: and in one sense this might be true; for if shoes were fitted out very small with a view

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to *neatness*, as it is called, it would obviously accelerate the mischief in a greater degree than when a more liberal allowance was made in this respect, and which circumstances resting entirely with the discretion of the workmen, in no way, perhaps, suspicious of its consequences, would ever be a matter of uncertainty; for the fact appears to be, that the finer the feet the sooner they are destroyed: hence the feet of blood horses are the first to experience its effects.

"Five years of unrestrained growth had perfected this mare's foot beyond what is generally seen at the commencement of shoeing, which usually takes place on the second, third, or fourth year, and before the foot is nearly unfolded or grown to its size; so that the great change that is here observable is more strongly manifested than it would be in ordinary cases of shoeing; and the foot cannot be expected to exhibit differences so great and conspicuous in succeeding years as in the first, there being less of elastic matter to act upon. Nevertheless, every year will have its effects, and will bring the hoof in closer approximation to the coffin-bone; and at length we shall see that a partial diminution of the bone itself will be the consequence, with other derangements of it.

"The horse, we may remark, like other large animals, is slow in acquiring maturity, and like them, is not very short-lived. Some celebrated writers have considered the natural period of his life about fifty years. This was before the art of shoeing commenced, and may be not far from the truth in those times. If we were to give an opinion on this matter, we should state it as our belief, that he acquires his stature or height at about five years, but obtains his full bulk and strength about the eighth year; and this period, as in most other animals, if multiplied by four, will give somewhere about the period of his natural life; which, without any desire of unnaturally extending, would be from thirty-two to forty; and at the former age we have seen (setting aside the state of his feet) horses capable of a great deal of service. But what we wish to remark is, that frequent visits to the slaughter-house, a useful school, but not much frequented, have led us to observe and conclude, that six arrive there before fourteen to one after the fourteenth year! for they so early become cripples through the injuries of their feet, that it is found most advantageous to the interests of those who get these kind of horses that are daily becoming tenderer, to "use them up" by the severest measures, and most unnatural usage, rather than to endeavour to prolong their labours by preserving them; and there is no want of supply through the causes above described, at least principally; and it deserves a closer attention from the public than it has ever yet received; for men, as we have before observed, have been really afraid to look into these things about horses, as though their affairs were somehow clothed in fearful and impenetrable mysteries."

Knowing the true cause of this destruction of the feet, it is amusing

musing to hear the opinions of those, to whose care this noble animal has been committed for so many centuries.

"If the stable-keeper is asked why his horses are so tender footed before? and why there needs so much trouble to keep them up? so much so, that all pleasure in riding is destroyed, his answer is, 'Why, horses to be sure will by use become leg-weary, and every one who *knows any thing about horses* knows that well enough,' and with a smile at the simplicity of the enquirer he quits the subject.

"If any one, not having the usual awe of this character, should ask the coachman why he wants two or three kinds of irons to be put in his horse's mouth, his answer will be, 'Why, would any one be so mad as to attempt to drive without them?' Then if you are apprehensive of your horses' falling, what is the cause of this? 'Go ask the smiths, they can tell you better about it, they don't *shoe them safely*.'

"If the shoeing smith be enquired of respecting this matter, and how does the horse become tender? 'Why, it is to be sure from always standing on the dry litter of the stables, and that is plain enough, for the hind feet are never affected, because they are more in the dung and moisture, which makes it clear enough;' and thus this business is disposed of without further trouble among them."

Our author is still continuing his experiments on the same mare, and has given an engraving of a cast taken after two years shoeing, and another after three years. By a comparison of these with that representing the foot in its natural state, the most superficial observer cannot fail to notice the great change in the outline of its form. In the natural state, the bearing part is nearly circular; a figure which is well known to contain the greatest possible area, and consequently the greatest bearing under the same circumference. Every mechanic would therefore infer, that this was the best possible form for the sole of a quadruped of such weight, strength, and swiftness. In the feet that have borne the use of the shoe for only three years, the circular form is changed into one almost resembling a parabola.

The breadth from outside to inside is greatly diminished, while the length from heel to toe is considerably increased; notwithstanding the frequent paring and filing away of the toe by the smith. As scarcely any persons except smiths, have opportunities of seeing the foot in its natural state, and they but rarely; and as the feet of the most admired horses of the blood kind, which have been shod a few years, are of this long and narrow form, we by habit learn to consider it as the most beautiful and natural.

The second part of this work, which is ready for the press, will contain an account of experiments made on other horses; plans and measures for preventing the evils resulting from the present mode of shoeing; how the *founder* in horses is produced; the defences

fences of the feet used by the ancients, with a variety of other subjects mentioned in the contents which accompany this first part.

We hope this short analysis will give our readers an idea of the great merit and importance of this work; and we are confident that no veterinary surgeon who learns that it is published, will be slow in procuring a perusal of it.

Report of the Diseases of Edinburgh for February, 1810. By John Roberton, M. D.

The mildness of the weather, at the commencement of this month, has, I believe, scarcely ever been equalled in our northern latitude at the same period. In consequence of this, vegetation made considerable progress, and insects of various kinds, whose existence can only be expected during the summer months, appeared in various places. In a week, however, we were again plunged in the very depth of winter. Frost and snow prevailed, and the first of these continued gradually to increase in severity. Additional and frequent, though not heavy falls of snow, occasionally accompanied it; and the weather became excessively cold. Before the termination of the month, we had also frequent falls of snow, which, however, were neither very heavy, nor did they continue long on the ground. The weather toward the end of the month was alternately soft and frosty, with frequent most tremendous hurricanes.

The barometer, till near the end of the month, was, in general, rather high, but then it fell considerably.

The thermometer, during the first third of it, stood, during the day, from 45 to 50, and some days it was even above 50. During the night, however, it sunk to near the freezing point. From this, till within a few days of the termination of the month, it was generally below the freezing point, and for several days together was seldom less than 10 degrees below it. During the soft days, near the end of the month, it of course rose considerably.

The diseases which have prevailed, have been numerous, but in general not very destructive. To those of last month, most of which still prevail, there have been added chin-cough, measles, and bowel complaints; and the cases of inflammation of the lungs, &c. and those of catarrh and cynanche tonsillaris, have become both more general and more severe. This increase of severity, in some of these

these complaints, may easily be accounted for. It is very common, in this part of the world, very early in the year, for the weather for a short period to become mild and agreeable. This induces a great proportion of the thoughtless part of the community to alter their dress, by too early taking off a part of their winter clothing. This annual mistake, subjects numbers to complaints, which, were they to recollect for a moment, the very unfavourable sort of climate in which they exist, would probably never affect them. Thus some very severe cases of catarrh are frequently to be met with during the spring months, and many of a consumptive habit, from this circumstance alone, have their lungs affected, which, with greater care and attention, might have been prevented for a long period, if not for the remaining years of their lives.

I may mention, also, that the cases of cynanche tonsillaris are, in general, considerably aggravated since last month. There are also various cases, independently of the throat being affected, in which considerable feverishness exists; the mouth becomes inflamed, and unless speedily checked by confinement to the house, by repeated doses of physic, gargles, &c. it proceeds to ulceration, and proves exceedingly troublesome to the patient, and in many, especially those advanced in life, some of their teeth have fallen out. In such cases, however, even when permitted to proceed, to the greatest pitch of severity, I remove them in a short period by frequently washing the mouth with port wine and water, and by administering repeated smart doses of physic.

The cases of chin-cough do not seem to be numerous, nor do the measles prevail very extensively. Both of these diseases, however, have, in various instances under my observation, affected three or four of the children, (for among them they are chiefly to be met with) of one family. I have found the most successful practice in the chin-cough, to be that of instantly, on the appearance of the first symptoms, putting the child to bed, and, during the first few days, preserving the body in a very equal and rather elevated temperature. This has, in general, seemed greatly to moderate the symptoms.

In such cases of the measles as have come under my observation, I have found the greatest benefit arise from the body being preserved in a temperature of about 60°. That, with the application of two or three leeches to the temples, on the first appearance of the symptoms, has been conspicuously beneficial.

Inflammation

Inflammation of the lungs, in particular, has appeared more frequently than at any period during the winter, and in greater severity. In several cases, I have found it necessary to order venæsection once every day for eight or ten days, even till the patient fainted at each time. In several cases, where the utmost activity of practice was persevered in, the patients have died. Some of their bodies were opened after death, and the adhesions between the lungs and pleura in some, were inconceivably strong, and existed at every point where the lungs could be brought in contact with the pleura. In others, there was an immense quantity of a sort of purulent matter secreted in the thorax.

The bowel complaints progressively became worse from the commencement till the termination of the month. This has, in almost every instance, been attended with feverishness; and the acute pains in the bowels which many suffered, were indescribably severe. In general, however, two or three doses of physic entirely removed this complaint; but in others, I have found it necessary, daily to employ emetics, and physic alternately, for more than a week.

Princes Street.

An Account of Diseases in an Eastern District of London, from February 20 to March 20, 1810.

ACUTE DISEASES.		Menorrhagia - - - -	6
Pneumonia - - - -	5	Fluor Albus - - - -	9
Peripneumonia Notha	6	Dysuria - - - - - -	5
Rheumatismus Acutus -	4	Rheumatismus Chronicus	9
CHRONIC DISEASES.		PUERPERAL DISEASES.	
Tussis - - - - - -	20	Peritonitis - - - -	2
Dyspnœa - - - - -	14	Menorrhagia Lochialis -	4
Tussis cum Dyspnœa -	24	Ischuria - - - - -	3
Catarrhus - - - - -	3	Mastodynia - - - -	5
Phthisis Pulmonalis - -	3	Dolores Post Partum -	6
Hydrops Pectoris - -	6	INFANTILE DISEASES.	
Pleurodyne - - - -	5	Diarrhœa - - - - -	5
Anasarca - - - - -	4	Convulsio - - - - -	3
Enterodynia - - - -	4	Tabes Mesenterica - -	4
Hypochondriasis - -	3	Ophthalmia - - - -	2

Many of the cases of pulmonic diseases, which have lately been referred to, terminated favourably. In a few instances,

instances hæmoptysis has occurred. This, though it has appeared to give some temporary relief by the abatement of pneumonic symptoms, must yet be considered as an unfavourable circumstance, as it is a strong indication, especially in younger subjects, of a predisposition to phthisis. In one instance, by taking away a little blood, and prescribing a very strict regimen, in which every thing that tended to quicken circulation was expressly forbidden, the appearance of this symptom was for the present suspended; it returned, however, in a few weeks, and, from the sensations the patient describes, it seems probable that it will soon make its appearance again, and continue by its frequent recurrence to keep up an alarm respecting its future consequences.

INTELLIGENCE.

M. Modeste Paroletti, has published a very long Memoir in the *Journal de Physique*, for the month of March last, of which we can only give the outline. It goes to excite the attention of the learned, to discover the nature of morbific exhalations, by the employment of colouring matters, as chemical re-agents hitherto little known, in order to throw light upon certain diseases.

Having observed that the bright scarlet colour of the American seed (*abrus precatorius*) changed into an ebony black, in the space of an hour, when held between the hands of his child, and placed in the bed at the time he lay ill with a putrid fever, he instituted an enquiry into the cause of this phenomenon. He found that the whole of the inside of these seeds became blackened, and that their natural colour was in part restored by the nitric acid. He tried in vain to re-produce the same phenomenon with the same patient.

These red seeds, exposed to the exhalation of putrefying animal substances, acquired a shade of dark red. Carbonic acid gas gave them in a few days a deep tinge, like the colour of wine; plunged into a mixture of three parts of hydrogen gas and two parts of azotic gas, they became of a blackish brown colour; but they took a very intense black colour, very nearly resembling that produced by the morbific virus, when they were immersed in a mixture of three parts of hydrogen, one of azote, and one of carbonic acid. Carbureted, sulphureted, and phosphureted hydrogen gas, appeared to him, when tried separately, to produce no action upon the red colour of the American seeds.

In reasoning upon these facts, M. Paroletti says, "It is probable that hydrogen, azote, and carbon, are among the number of constituent

constituent principles of morbific miasmata; it is natural to believe that the nitric acid, which acts in a different way to what these three substances do, exerts a decomposing power upon them. This opinion is confirmed by theory, and by the success of the means of disinfection which we employ. The only conclusion that we ought at present to draw is, that it is of very great importance to extend our knowledge of azote and hydrogen. He adds, "I shall conclude with two observations which arise from these experiments, and which may show the utility of employing *colouring matters* as re-agents in chemical researches. We have only vague conjectures on the nature of different cutaneous secretions which take place in a great number of diseases. The chemical knowledge of these discharges will be of great service in medicine. The colouring matters offer themselves as useful instruments in this kind of discoveries. We only want an accurate account of the different changes of colour caused by the exhalations in a great many diseases, to institute a set of experiments, the results of which would be highly interesting."

Mon. Descroizilles has inserted some observations, in the Annales de Chimie, vol. lxvii. 80, on the use of the *pickle of violets*, as a re-agent, which can be had at all times, while the syrup is liable to be spoiled by keeping. It is made by pouring double their weight of boiling water upon the petals, slightly pressed, in a clean pewter measure, which is to be exposed for a few hours to a heat rather greater than a water bath. Add to the infusion, when strained, one third its weight of very fine white salt, stirring it till it is dissolved. It should be kept in a phial corked up. For use, dip a small stick into this liquid, and touch a clean earthen plate in several places. Vegetables and flowers, as roses, may be preserved any length of time for distillation by salting them. Rub one-third their weight of salt with them, which forms a kind of paste of little bulk; dilute this in the still with twice its weight of water, and the distilled liquor will be equally fragrant as when drawn from the fresh plants.

We have received a specimen of the gum of opium from Messrs. Vincent, Nurbel & Co. Chemists in Old Bond Street, which is much used in France, as possessing the anodyne and soporific qualities, without producing the disagreeable effects on the head and stomach, so much complained of in the common opium.— From the few trials we have made of this gum, it appears to be a valuable preparation of that important drug. One instance was that of a delicate lady, who had never been able to use common opium, even in small doses, without experiencing distressing nervous sensations, disturbed sleep, and on the morrow, severe headache and sickness. A grain of this gum, taken by her, produced none of these disagreeable effects. The dose is the same as that of common opium. The following is their method of separating the gum from the resin. Take any quantity of crude opium, and cut it

it into small slices; pour a gallon of water to each pound of opium, and let it digest for forty-eight hours, often stirring the fluid. Filtre the liquor, and evaporate it to one half; to this add cold water, equivalent to what was evaporated. Filtre again on the morrow, and repeat this operation for ten days or more, or until the addition of cold water throws down no more precipitate; then evaporate the liquor in a water bath down to an extract. The resin precipitated by the cold water is kept for external applications.

The Austrian government has lately proposed the following prize-questions, relative to substitutes for various foreign articles in the Materia Medica. 1. What indigenous or European productions, distinguished by specific effects, may be substituted for those now brought from India. 2. A substitute for camphor. 3. A substitute for Peruvian bark. 4. What species of plants may replace senna, jalap, and ipecacuanha? 5. A substitute for opium. The prize for each question is five hundred ducats.

The Medical Society of London, held their Anniversary Meeting on the 8th instant, at their house in Bolt-court, when the following officers were elected. President, Dr. Lettsom; Vice-Presidents, Dr. Bancroft, Mr. Norris, Dr. Pinckard and Mr. Abernethy; Librarian, Dr. Clutterbuck; Secretaries, Mr. Good and Dr. Hamilton; Council, Mr. Field, Mr. Chamberlaine, Dr. Haighton, Dr. Adams, Mr. Seaton, Dr. Thornton, Mr. Griffith, Mr. Robinson, Mr. A. Cooper, Mr. M'Donald, Mr. Hopkins, Mr. Geo. Young, Mr. Platt, Mr. Addington, Dr. Lidderdale, Mr. Ramsden, Dr. N. E. Bancroft, Mr. Lawrence, Dr. Shearman, Mr. Forster, Mr. Saumarez, Mr. Lewis, Mr. Upton, Mr. Beveridge, Mr. Harvey, Dr. Temple, Dr. Bateman, Dr. Fothergill, Dr. Birkbeck, and Dr. Hancock; Registrar, Mr. A. B. Turnbull. After which the Society adjourned to the London Coffee-house, Ludgate-hill where an excellent oration was delivered to a numerous audience by Dr. Birkbeck, "on the inaccuracy of Medical Logic, and on the Expectation of future Improvements in the Science of Medicine." The Members of the Society afterwards dined together as usual.

Dr. Bradley is preparing a Work, to contain the First Lines of the London Practice of Physic. This is intended to be a strictly practical book, and therefore, will not include those preparatory branches, denominated the Institutions by Boerhave, or the Theory of Medicine by others. It is also designed to avoid all interference with Midwifery and Surgery; so that one moderate volume, it is presumed, may contain the first lines of medical practice. The Author will avail himself of the assistance, both of his medical friends in the metropolis, and of the labours of those who have practised in distant countries; or where climate has a powerful effect in modifying the symptoms and mode of treatment.

We are much obliged to Mr. Foster for his communication, which, with Mr. Hargrove's, shall appear in our next.